Executive Summary

There are three program educational objectives for the industrial engineering program. These program objectives are consistent with the university mission, and were developed using a process developed in 2002 and will be reviewed in 2014 with active participation with the program constituencies. There is a well-established process to obtain feedback from the program constituencies at regular intervals to measure the extent of our graduates’ achievement of program educational objectives. The department has a process to evaluate and improve the program based on the information collected on the graduates from the program constituencies. All the data collected from the surveys indicate that the industrial engineering program graduates are consistently achieving all the program educational objectives.

A. Mission Statement

As stated in the Texas A&M University Undergraduate Catalog and other University publications, the mission of the University is as follows:

Texas A&M University is dedicated to the discovery, development, communication and application of knowledge in a wide range of academic and professional fields. Its mission of providing the highest quality undergraduate and graduate programs is inseparable from its mission of developing new understandings through research and creativity. It prepares students to assume roles in leadership, responsibility and service to society. Texas A&M assumes as its historic trust the maintenance of freedom of inquiry and an intellectual environment nurturing the human mind and spirit. It welcomes and seeks to serve persons of all racial, ethnic and geographic groups, women and men alike, as it addresses the needs of an increasingly diverse population and a global economy. In the twenty-first century Texas A&M University seeks to assume a place of preeminence among public universities while respecting its history and traditions.

The mission statement below describes the fundamental mission of the Dwight Look College of Engineering and is published in the Texas A&M University Undergraduate Catalog.

To serve the state, nation and global community by providing engineering graduates who are well founded in engineering fundamentals, instilled with the highest standards of professional and ethical behavior, and prepared to meet the complex technical challenges of society.

This is the mission of the industrial engineering program as written in the Texas A&M University Undergraduate Catalog.

To serve the state, nation, and global community by educating industrial engineering students to be well founded in engineering fundamentals and to have
the knowledge and skills required to design, develop, improve, implement and control sophisticated production and service systems in an environment characterized by complex technical and social challenges. Throughout this educational process, students will be instilled with the highest standards of professional and ethical behavior.

All three of these mission statements---the university, the college, and the department---stress service to the state and nation. All of them express the goal of graduating students of the highest quality, capable of leadership, and possessing the skills to be productive and effective professionals.

B. Program Educational Objectives

Consistent with the departmental mission, the educational objectives of the undergraduate program have been developed and published in the Texas A&M University Undergraduate Catalog. These are the program educational objectives for the Industrial Engineering Program at Texas A&M:

1. Graduates will be successful in improving operations by solving complex industrial engineering problems.
2. Graduates will demonstrate professional leadership.
3. Graduates will be instilled with the motivation and ability to accomplish professional lifelong learning.

In developing the program educational objectives, the first objective was divided into three subcomponents. This is a more detailed description of the objectives for equipping our graduates:

1. Graduates will be successful in improving operations by solving complex industrial engineering problems.
   a. Graduates will have the ability to determine the relevant components of a given unstructured industrial engineering problem and synthesize them to develop a solution procedure, evaluate the solution, and communicate the impact of the solution in the broad context of the organization.
   b. Graduates will have the knowledge and the ability to effectively apply computational and analytical methods in the solution of recurrent industrial engineering problems as well as other problems that may not be easily recognized as being potential applications for these methods.
   c. Graduates will have the ability to execute all relevant steps involved in the collection, analysis, and interpretation of data in the context of industrial engineering applications.
2. Graduates will demonstrate professional leadership.
3. Graduates will be instilled with the motivation and ability to accomplish professional, lifelong learning.

The subcategories for the first objective give additional details to the meaning of “solving complex industrial engineering problems.” The program criteria for industrial engineering require that graduates “have the ability to design, develop, implement, and improve integrated systems.” Subcategories (a), (b), and (c) show that the intent of these objectives is the design, development, implementation, and improvement of systems within an engineering context; thus, a graduate who successfully fulfills the program objectives will have satisfied the program criteria of industrial engineering.

**ABET Assessed Outcomes for the ISEN Program**

A. an ability to apply knowledge of mathematics, science and engineering

B. an ability to design and conduct experiments, as well as to analyze and interpret data

C. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability

D. an ability to function on multidisciplinary teams

E. an ability to identify, formulate, and solve engineering problems

F. an understanding of professional and ethical responsibility

G. an ability to communicate effectively (3g1 orally, 3g2 written)

H. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context

I. recognition of the need for, and an ability to engage in life-long learning

J. a knowledge of contemporary issues

K. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.