ABET Course Description

IND E 337
Intro to Manufacturing Systems

Catalog Course Description: Description of manufacturing systems. Includes discussion of current trends in manufacturing.

GOALS

Students who take this course will gain a basic understanding of manufacturing systems management, including work organization, work measurement, basic scheduling mechanisms, and current theories of manufacturing management, including lean thinking, OPT, JIT and group technology.

COURSE OBJECTIVES

1. Students will recognize manufacturing organizations, including job shops, flow lines, assembly lines, work cells.
2. Students will have a basic understanding of time and motion study, work sampling, and process flow charting.
3. Students will have a basic understanding of current manufacturing control theories, such as lean thinking, Opt, and JIT.
4. Students will be able to solve basic scheduling problems for assembly lines, job shops
5. Students will be able to use the library to do technical research.
6. Students will learn to critically observe manufacturing operations.
7. Students will be able to produce short technical reports individually and in teams.

PROGRAM OBJECTIVES THIS COURSE SATISFIES

1. Graduates will be capable in mathematics, sciences, engineering fundamentals, and the use of computers.
2. Graduates will have a broad knowledge of the various modern industrial engineering methods and tools associated with manufacturing systems, operations research, quality engineering, and human factors.
4. Graduates will have the ability to communicate effectively.
5. Graduates should possess the following professional characteristics: leadership, ethics, the ability to work with others, and an appreciation for other disciplines.
6. Graduates will have an understanding of the integrated, broad nature of the IE discipline with an appreciation of the depth of the field and an ability to find information, when needed.

ABET LEARNING OUTCOMES (a-l) THIS COURSE SATISFIES

a. an ability to apply knowledge of mathematics, science and engineering
e. an ability to identify, formulate, and solve engineering problems
g. an ability to communicate effectively
h. the broad education necessary to understand the impact of engineering solutions in a global and societal context
i. a recognition of the need for, and 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
l. an understanding of the integrated, interdisciplinary nature of the discipline.

ASSESSMENT

1. Reports are graded.
2. Problem sets are graded.

CONTRIBUTION TO PROFESSIONAL COMPONENT

This course is part of the engineering topics area, and includes aspects of both engineering science and design.