1. ISYE 415, Introduction to Manufacturing Systems, Design and Analysis
2. Credits: 3  Contact Hours: 3.3
3. Textbook and Materials: No textbook, reference books and video tapes are kept on reserve in the library

a. Other Supplemental Materials: None

- Specific Course Information:

  a. Brief description of the content of the course (Course Catalog Description):
     Introduction to the technologies, processes and systems of modern discrete part manufacturing. Emphasis on development of an understanding of the behavior of integrated systems.

b. Pre-requisites or Co-requisites: Ind Engr 315, 320, 321; or cons inst

c. This is a Required course.

- Specific Goals for the Course:

a. Course Outcomes:

1. To provide an introduction to the design and analysis of manufacturing systems. The course will develop students’ knowledge in three areas: manufacturing processes and computer-integrated manufacturing systems, manufacturing system design and analysis, and modern manufacturing management strategies.

- ABET Student Learning Outcomes:

  (a) Ability to apply mathematics, science and engineering principles.
(b) Ability to design and conduct experiments, analyze and interpret data.
(c) Ability to design a system, component, or process to meet desired needs.
(d) Ability to function on multidisciplinary teams.
(e) Ability to identify, formulate and solve engineering problems.
(f) Understanding of professional and ethical responsibility.
(g) Ability to communicate effectively.
(h) The broad education necessary to understand the impact of engineering solutions in a
global and societal context.
(j) Knowledge of contemporary issues.
(k) Ability to use the techniques, skills and modern engineering tools necessary for
engineering practice.

- **Brief List of Topics to be Covered:**

  Introduction to materials and engineering drawing. Steel making. Turning Operations.
  conventional manufacturing processes. Semiconductor manufacturing and circuit board
  Flexible manufacturing systems. Assembly line and balancing. Recent Manufacturing
  strategies. Dynamics of manufacturing systems. Performance evaluation of manufacturing
  systems. Problems facing traditional accounting systems. Activity-based costing.
  Justification of manufacturing systems.