University of Wisconsin - Madison
College of Engineering [EGR]
Last Offered: 2013 Fall [1142]
Direct Link to this Syllabus :
http://aefis.engr.wisc.edu/index.cfm/page/CourseAdmin.ViewABET?coursecatalogid=272&pdf=True

1. **ISyE 652, Sociotechnical Systems**
2. **Credits :** 3.00 **Contact Hours :** 2.5
3. **Textbook and Materials :** No required textbook, required readings will be provided.
   a. **Other Supplemental Materials :** N/A
4. **Specific Course Information :**
   a. **Brief description of the content of the course (Course Catalog Description) :** Sociotechnical systems theory with applications to the design of organizations and jobs. Open systems and organizational environments. Analysis of the technical and social systems and techniques for 'whole' system consideration. Organizational design strategy. Field site analyses by student teams.
   b. **Pre-requisites or Co-requisites :** Grad st or IE 349
   c. **This is a Selected Elective course.**
5. **Specific Goals for the Course :**
   a. **Course Outcomes :**
      1. To know theories and concepts of sociotechnical systems.
      2. To understand various methods and approaches for analyzing and redesigning sociotechnical systems.
      3. To be able to apply theories and concepts of sociotechnical systems.
   b. **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.
      (i) Recognition of the need for and an ability to engage in life-long learning.
      (j) Knowledge of contemporary issues.
      (k) Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.
6. **Brief List of Topics to be Covered :**

   Open systems, history of sociotechnical systems, technical systems, social systems, environmental systems, sociotechnical systems analysis, sociotechnical systems design and redesign, macroergonomics and organizational design, participative decision making, real-world sociotechnical systems applications.

7. **Additional Information :** Product Development, Production Systems, Routing, Time Study, Single

Station, Assembly Line, Dedicated Line, Cellular Manufacturing, Space Requirement, Material Handling and Equipment, Flow Analysis, Systematic Lay outing Planning, Analytical Planning, Computer-Aided Layout Design Methods