I. CATALOG DESCRIPTION:
   A. SYST 560 Introduction To Air Traffic Control (3: 3: 0)
   B. Prerequisites: graduate standing, STAT 344 and SYST 335, SYST 417.
      OR 542 is encouraged as a co-requisite.
   C. Catalog Description:

      This course is intended as an introduction to Air Traffic Control (ATC) for those who plan professions in the aviation industry. It is a necessary introduction for students who will later specialize and take more in-depth courses. The course will survey the entire field, presenting the history of ATC and how it came to be as it is, the technology on which the system is based, the procedures used by controllers to meet the safety and efficiency goals of the system, the organizational structure of the FAA, challenges facing the system and means under investigation to meet these challenges. This course will involve some field work for data collection and analysis. A class project requiring a system simulation will be required.

II. JUSTIFICATION:
   A. Course Objective: Students will learn the necessary basic knowledge in air traffic management of today’s air transportation system. This course prepares students for work in both industry and at a graduate level.

   B. Relationship to Other Courses: This is a required course for graduate students who want to study in the field of air transportation. SYST 560 is a prerequisite to SYST 660. Credit will not be given for both SYST 460 and 560.

III. RECOMMENDATION:
   A. This course has been approved by the following:

      SEOR Committee Date: 1 Nov 2002
      SITE graduate Committee Date: Jan 2003
      SITE Dean Date: Feb 2003

      Instructors: George L. Donohue and/or Adjunct faculty from MITRE/CAASD, the FAA, or METRON Aviation as needed.

IV. SEMESTER AND YEAR FOR OFFERING: This course is offered for the Fall semester of 2003 and every Fall semester after that.
V. COURSE SYLLABUS

Topic Outline:
1. History of ATC:
   Early development of control systems
   Involvement of the Federal government
   Key enabling and regulating legislation
   Emergence of the FAA
   Recent development issues (e.g., controller’s strike

2. Basic ATC Technology:
   Navigation systems
   Communications systems
   Surveillance systems (Radar, etc.)
   Automation systems

3. Operations and Procedures:
   Airports
   Terminal airspace
   En route airspace
   Radar and non-radar control
   Oceanic ATC

4. System modernization:
   Motivation for modernization
   Key challenges faced by the system
   New technology and procedures to meet these challenges

Airport operations data will be collected and analyzed as part of the course field work. Visits to FAA control facilities are planned.

Final Exam will satisfy the FAA Private Pilot written exam requirement to obtain a pilots license.

Course Texts:


5/29/2003