

November 20, 2007

**TCOM 521**  
**Systems Engineering**  
**For Telecommunications Management**

Pre-Requisites: TCOM 500  
Term: Spring 2008  
Time: 4 30 PM to 7:10 PM on Mondays

Course Meets: January 28-May 12  
Location:  
Instructor: D.K.Sachdev (dksachdev@spacetelconsult.com)

**Course Objectives**

The main objectives of this course are to learn modern project management and system engineering principles and to apply them towards the implementation of complex telecommunications systems. For the Spring 2008 class, the students will actively participate in an interactive project for a modern satellite-based hybrid system. They will first learn the basics of Project Management. They will then grasp the programmatic fundamentals as applied to satellite systems. Thereafter they will learn and critique case histories for recently implemented systems. In the final phase, they will do project work in teams at the system-level, requirements definition, ground segment and the space segment. In this project work, the focus will be on system or sub-system definitions, real-world procurement practices and methodologies, and sound management of time frames.

**Course Policies:**

Students are permitted and encouraged to collaborate on homework and design project assignments. All graded work, however, must be the original effort of the student submitting the paper. This means that, while two or more students can develop a solution approach for a homework problem together, each student must independently execute the solution if it is to be submitted for grading. In the case of the design project, it is encouraged that, while each student must independently develop a response, students seek and provide comments for each other's approach. This collaboration is characteristic of the actual engineering design environment.

Students are not permitted to provide, seek, or accept assistance or information for examination problems other than from their own class notes, class handouts, or published written materials. This policy is intended to include general discussions of the theory and practice of satellite communications systems and related topics during the period between when the examination is released to the students and submitted to the instructor for grading. Questions may be submitted to the instructor during the examination periods but, depending on the question posed, may not be answered. If a student feels that insufficient information is provided to answer an examination question, the student should ask the instructor for clarification. If this is

not possible or practical, the student should state the apparent deficiency clearly, make a reasonable assumption, and proceed with the problem.

Students must be on time for the classes. The deadlines for homework will be strictly adhered to.

### **Grade Composition**

Home Work	20%
Project	30%
Mid-Term	25%
Final	25%

### **Required Books**

1. Pratt, Bostian and Allnutt, Satellite Communications, Second Edition (2003), Wiley, ISBN 047137007-X

2. Sachdev, D.K., "Business Strategies for Satellite Systems", (2004), Artech House, ISBN 1-58053-592-5

If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 993-2474. All academic accommodations must be arranged through the DRC.

### **TCOM 521 Fall 2007 CLASS SCHEDULE**

DATE	CLASS	TOPICS
1/28	1	Project Management-1
2/04	2	Project Management -2
2/11	3	Satellite Basics
2/18	4	Satellite Background & Tools-I
2/25	5	Satellite Background & Tools-II
3/03	6	Satellite Background & Tools-III
3/17	7	<b>Mid-Term Test</b>

3/24	8	Case Studies-1 & Project Teams
3/31	9	Case Studies-2 & Team Work
4/07	10	System Planning & Team Work
4/14	11	Spacecraft Procurement & Team Work
4/21	12	Ground Segment Procurement & Team Work
4/28	13	<b>Final Exam</b>
5/05	14	Class Presentations-1
5/12	15	Class Presentations-2