Coordinating Seminar – TCOM 750

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1. Announcements

TCOM 750 will meet in the Nguyen Engineering Building, room 1108.

Inclement Weather Please be safe. The class follows the GMU inclement weather policy. The Mason Alert system can Notify you when the University is closed, or closing due to weather related issues. To receive alerts, join the Mason Alert group:

- Log on to Mason Alert at https://alert.gmu.edu
- Click the "My Alerts" tab.
- Click the "Optional Alert" bar.
- Review the full list of alerts and join the "Weather related closing group".
- When finished, click the "Home" tab.
- All of your registered devices and group memberships will be listed.

2. Expected Background

College-level telecommunications engineering, business or engineering statistics and basic business planning are required. Students are expected to learn and master cost-effective design concepts that require some numerical manipulation. Concepts learned earlier in TCOM classes will be used with a number of examples to explain the concepts in detail.

3. Expected Learning Experience

TCOM 750 is the required class for all students in the telecommunications program and is the capstone class to introduce you to applying those design concepts in a thoughtful and considered manner. You will be required to do extensive research on current industry trends as well as research on and development of requirements and alternative designs for proposed technology solutions. The class emphasizes an approach based on a Request for Proposal (RFP) and response process where a problem is presented and teams have to develop competitive approaches. Primary course material will be PowerPoint slides with lectures distributed on Blackboard. You are required to select a topic relevant to the syllabus and give a 5- and a 10-minute presentation to the class during the semester.

NOTE: All lectures and homework assignments and solutions are posted on Blackboard or in class. You must activate your GMU Email; you can forward your Email to a preferred email. Please clean out your email regularly to avoid storage problems and rejected Emails.

4. Required Books

- None

5. Lecture Notes

- PowerPoint slides will be posted on Blackboard before each lecture.

6. Homework

Homework Exercises will be assigned periodically (approximately one per week for the first half of the course) and are due the following week at the beginning of class unless otherwise specified. Homework is collected in soft copy, unless otherwise directed. Please show intermediate steps so partial credit may be given, even if you have not reached the correct solution. PLEASE put your name and ID number on each file or sheet of paper and staple the sheets together. The required file naming format is: lastname_G00012345_TCOM750_HWx.ppt. Late homework is only be accepted with prior permission, and if the graded homework has not yet been handed back to the class. To help with travel commitments one assignment may be dropped from the total number of homework. Students can work together on homework problems, but should submit their own written work.

IMPORTANT NOTE: Students are encouraged to find, and use, any and every source they may locate to answer a question. HOWEVER: if elements of their paper have been downloaded from the web or transcribed from another source, STUDENTS MUST WITHOUT FAIL acknowledges the sources. If elements used are exact copies, quoted passages must be within quotation marks to note they are not student original statements. This includes written sections, diagrams and pictures. Failure to acknowledge a source used contravenes the copyright act and may be subject to honor code proceedings if the student claims the work to be original when copied from another person or source. Turnitin.com may be used to review papers for plagiarism.

8. Semester Project

Student teams are required to submit a team presentation paper on a provided topic provided in the form of an engineering proposal. Topics for this project in the past have included:

- Development of a micro-satellite engineering center at GMU.
- Development of a micro-satellite proposal.
- City of Fairfax feasibility study for an 802.11 city-wide wireless network
- One Laptop Per Child (OLPC) Remote Area Communications
- Micro Grid System and Communications
- Unmanned Aerial Vehicle Communications Support for State and Local
- Southwest Asia Remote Village Communications
- Cloud Computing to promote Business Continuity
- Integration of autonomous cars

The semester project is designed to develop awareness of the multifaceted impact of digital

communications technology on our everyday lives, teach organization and teamwork, and give an appreciation for the difficulties of developing communications solutions for an imperfect world. It is also a way of getting students used to writing technical papers and business proposals that will be required in their work careers. Students will work in groups on the semester project, but may be graded individually based on their participation.

References cited may be either placed as footnotes on the page where the reference is cited or sequentially in a numbered index at the end. Full references shall be given (all authors, journal name, volume, number, date, pages [start and stop]) and, for web references, the full URL and the date the material was extracted.

9. Final Exam

The final exam is the semester project presentation and will be given during the final class.

10. Course Grades

Project Team Grade is the key component and this can be modified/improved based on a weighted average of the homework, class participation, and the 5- and 10-minute presentations.

12. Course Outline/Schedule

Note: We will adjust depending on class project and class capabilities.

1. Class 01: 23 Jan – LTE and 5G Technology Telecom Trends 2018
2. Class 02: 30 Jan – Disruptive Innovation/Innovators Dilemma/Telecom Trends
3. Class 03: 06 Feb - Proposal Process and Requirements Analysis
4. Class 04: 13 Feb - Making Things Stick
5. Class 05: 20 Feb – Tipping Point
6. Class 06: 27 Feb - Effective Presentations
7. Class 07: 06 Mar – Systems Engineering and Integration
8. Class 08: 13 Mar – Spring Break – No Class
9. Class 09: 20 Mar - Business Intelligence/Semester Project
10. Class 10: 27 Mar – Strategy
11. Class 11: 03 Apr – Proposal Coaches
12. Class 11: 10 Apr – Technology Innovation
13. Class 12: 17 Apr – Ethics and Research
14. Class 13: 24 Apr - Analysis/Business Continuity
15. Class 14: 01 May - Individual Presentations/Team Meetings
16. Class 15: 08 May – Individual Presentations/Team Meetings
17. Class 16: 15 May - Final