Overview

- People in the Telecommunications program
  - Who is who?
- Degree and certificate programs
  - What do we offer?
- Planning your degree program
  - How do you get your degree?
- Odds and ends

http://telecom.gmu.edu/
People in Telecommunications

- Program Administrator:
  - Toshiko Uchiyama
    - Email: tuchiyam@gmu.edu
    - Phone: 703-993-3810
    - Location: Engineering Building, suite 3300

- Program Director:
  - Dr. Peter Paris
    - Email: pparis@gmu.edu
    - Phone: 703-993-1559
    - Location: Engineering Building, office 3304

Full-time Faculty:
- Dr. ShyamPandula
  - Email: spandula@gmu.edu
  - Location: Engineering Building, office 3253
- Prof. Bob Osgood, Director of CFRS program
  - Email: rosgood@gmu.edu
  - Location: Engineering Building, office 3251
- Other faculty from ECE department teach TCOM courses on a regular basis.
People in Telecommunications

- Adjunct faculty:
  - Many courses in the Telecommunications program are taught by adjunct faculty.
  - These faculty bring to the program:
    - Invaluable practical experience
    - Outstanding academic credentials
  - The practical orientation of the program is very well matched by the practical expertise of our adjunct faculty.

Program Overview

- Program Philosophies:
  - suitable for students who have not taken engineering courses as undergraduates,
    - Quantitative (mathematical) treatment is de-emphasized
  - focus on communications systems, wireless networks, computers, and systems engineering,
    - System-level treatment of communication systems is emphasized.
  - combined with courses on policy, law, business, project management, and other topics.
    - Provides breadth of relevant knowledge.
Degree and Certificate Programs

- MS in Telecommunications
- Graduate Certificate Programs (usually earned as part of MS in Telecommunications)
  - Certificate in Advanced Networking Protocols
  - Certificate in Network Technologies
  - Certificate in Telecommunications Forensics and Security
  - Certificate in Wireless Communications
- Ph.D. in Information Technology
- Telecommunications Concentration

Overview of Program Requirements

- 10 courses total – 30 credit hours.
- 15 credits of core courses
  - Designed for foundation and breadth of program.
- 15 credits of focused technology and engineering, providing specialization in:
  - Network Technologies,
  - Network Applications,
  - Wireless Communications,
  - Network Security and Forensics.

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Planning Your Degree Program

- This is YOUR degree program!
- A lot of opportunity exists to select a sequence of courses that
  - Satisfy your needs and interests, and
  - Meet the requirements of the program.
  - Take advantage of these opportunities!
- Advising questions:
  - “Which classes should I take?”
  - “I am interested in these classes! What do you think?”

YOU must understand the requirements of the degree and/or certificate program!
- Your advisor can help you plan your program, but
  - ultimately it is your responsibility to take classes that satisfy the degree requirements.
  - More about “advisors” and “plan of studies” a little later.
- The program requirements are provided in detail in the University Catalog (http://catalog.gmu.edu).
  - The catalog is like a “contract” between you and the university.
  - A copy of MS Telecommunications pages is also on the TCOM website.
  - Be familiar with “Academic Policies” and understand thoroughly the “Degree requirements” for your program.
Planning Your Degree Program

- The MS in Telecommunications program requires that you take classes according to the following structure:
  - Core Foundation Courses: 9 credit hours
    - Very little choice in selecting these courses
  - Core Elective Courses: 6 credit hours
    - Provide breadth, may be non-technical
  - Focused Specialization Courses: 15 credit hours
    - Your opportunity to become an expert in a specialization area of Telecommunications.

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Planning Your Degree Program

- **Core Foundation Courses**
  you must take the following four courses
  1. TCOM 500 (3cr): Modern Telecommunications
  2. TCOM 501 (1.5cr): Data Communications and Local Area Networks
     - With approval by advisor this may be replaced by TCOM 509 (1.5cr): Internet Protocols
  3. TCOM 502 (1.5cr): Wide Area Networks and Internet
     - With approval by advisor this may be replaced by TCOM 529 (1.5cr): Advanced Internet Protocols
  4. TCOM 521 (3cr): Systems Engineering for Telecommunications Management

- Usually these courses are taken early in the degree program:
  - They don’t have prerequisites and they are prerequisites for other courses.

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Note: TCOM 590 “Comprehensive IP” is equivalent to TCOM 509 and 529.
Planning Your Degree Program

- **Core Elective Courses**
  You must take two of the following four courses:
  1. PUBP 726 (3cr): Telecommunications Policy and International Strategies
  2. TCOM 514 (3cr): Basic Switching (lab) or TCOM 515 (3cr): Internet Protocol Routing (lab)
  3. TCOM 750 (3cr): Coordinating Seminar
  4. TCOM 547 (3cr): Project Management in Telecommunications

- Additional options to satisfy this requirement are offered on a regular basis.
  - Check your e-mail and the TCOM website.
  - These courses ensure that students acquire sufficient breadth in their studies.
  - They are usually taken near the middle or towards the end of the program.

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Planning Your Degree Program

- **Focused Specialization Courses**
  You must take 15 credit hours of specialized courses that form a *coherent* sequence of courses.

- When planning your sequence of specialization courses you must take into consideration:
  - Prerequisites: advanced courses can only be taken after the corresponding foundation courses.
  - Course schedule: Not all courses are offered every semester.

- A *coherent* sequence of courses provides for true specialization in an area of telecommunications.
  - Don’t want a “random sampling” of graduate courses.
  - Tip: Plan to earn a certificate and you will automatically end up with a coherent sequence of specialization courses.
Planning your Degree Program

- Prerequisites must be taken into consideration when planning your degree program.
- Prerequisites are listed in the catalog.
  - Example: 611 Multi-Protocol Label Switching (MPLS) (3:3:0)
    Prerequisites: TCOM 609 or 610...
- Prerequisites lead to “course progressions”, i.e., a flowchart indicating courses and their prerequisites.

Wireless Course Progression

Core Course

TCOM 500 Modern Telecommunications

Specialization Courses

TCOM 501 Digital Communications
TCOM 607 Satellite Communications
TCOM 507 Advanced Link Design

TCOM 552 Intro. Mobile Comm.
TCOM 606 Advanced Mobile Comm.

Future: TCOM 557 Wireless Lab

TCOM 516/526 GPS/Advanced GPS

Several advanced courses in the networking area were added recently. They don’t have a permanent course number yet.
Certificate Programs

- Certificate programs are intended to document proficiency in a well-defined area of telecommunications.
  - Either stand-alone,
  - Or as part of degree program.
- Useful also to help select courses for focused specialization requirement.
- MS Telecommunications students simply apply for a certificate after they completed the corresponding requirements.

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Certificate Programs

- The following four certificate programs are currently available:
  1. ANPT: Advanced Networking Protocols for Telecommunications
  2. NETT: Network Technologies and Applications
  3. TFAS: Telecommunications Forensics and Security
  4. WIRE: Wireless Communications
- All certificates require 15 credit hours of course work in the area covered by the certificate.
  - Detailed requirements are specified in the catalog.

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Odds and ends ...

- **Plan of Study:**
  - A somewhat formal process to plan students’ sequence of courses.
  - **Objectives:**
    - Ensure that students work towards an approved degree program at all times.
    - Avoid unpleasant surprises at graduation time.
  - **Process:**
    - Student develops plan of study (see website).
    - Reviewed and approved by advisor (with any needed changes).
    - Update plan as often as needed; advisor reviews and approves each update.
    - Student keeps original; copy is kept in the department.

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### M.S. in Telecommunications

Master’s Degree Plan of Study

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<tr>
<th>Last Name</th>
<th>First Name</th>
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This plan should be kept up to date based on consultation with student's advisor. Consequent changes should be appropriately annotated on the student's and TCOM file copy. A final, signed, version must be submitted by the student with the graduation application.

#### COURSE

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<th>Grade</th>
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<tr>
<td>TCOM 500</td>
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<td>Spr. 07</td>
<td>A</td>
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<tr>
<td>TCOM 501/2</td>
<td>Data Comm &amp; LAN/WAN &amp; Internet</td>
<td>Spr. 07</td>
<td>B/B+</td>
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<td>TCOM 521</td>
<td>Systems Eng. For Telecomm</td>
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<td>A</td>
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<td>TCOM 514</td>
<td>Basic Switching</td>
<td>Fall 07</td>
<td>A-</td>
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<td>TCOM 516</td>
<td>Advanced Switching</td>
<td>Spr. 08</td>
<td>A</td>
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<tr>
<td>TCOM 509/29</td>
<td>IP/Advanced IP</td>
<td>Spring 08</td>
<td>A/B+</td>
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<td>TCOM 609</td>
<td>IGP</td>
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<td>A-</td>
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<td>TCOM 611</td>
<td>MPLS</td>
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<td>VoIP/Advanced VoIP</td>
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### Remarks
- Remediation Required/Substitutions/Justifications

Approved by

<table>
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<th>Position</th>
<th>Date</th>
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Odds and ends ...

- **Advisors:**
  - All students are assigned an advisor.
  - The name of your advisor was sent to you with your admission letter.
  - A list of students and their advisors is posted outside the TCOM office.
    - Updated every semester.

- **Distance education classes:**
  - Starting with the Spring 2010 semester, the TCOM program will offer on-line classes.
    - Great for students who travel a lot.
  - This semester TCOM 500, 501/02, 509/29, 516/26, 552, 562, 609, 610, and 690 (IP Multicast) will be taught on-line.
  - On-line course offerings will expand continuously.
For non-degree students:
- You can only transfer up to 12 credit hours into the degree program.
  - The university does not grant exceptions to this rule.
  - Only classes with B or better can be transferred.
- Apply very soon for admission into the degree program!
- After admission, request transfer of credit.

Email:
- You must activate your Mason email account.
  - Visit http://mail.gmu.edu
- All official correspondence will be sent to your gmu.edu e-mail account.
  - Forward mail to another account if you prefer.
- You will miss important information unless you keep your account in working order.
  - Common problem: mailbox is full.
Odds and ends ...

- GTA positions:
  - We have approximately six positions per semester.
  - Applications are accepted twice a year:
    - Deadlines: July 15 and December 15.
  - Application process is very competitive.
    - High GPA (near 4.0)
    - Seniority (at least 12 cr hrs completed)
    - Specific needs

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Odds and ends ...

- Honor code:
  - University summarizes expected academic conduct in Honor Code (see catalog).
  - Honor code states explicitly:
    - Do not copy other student’s work
    - Do not copy from the web without using quotation marks around copied work
    - Usually no more than 10% of content may be directly quoted
    - All quotations must have a reference cited
  - Unfortunately, about 1% of TCOM students are sent to the honor court each year

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Important Resource

- TCOM website: [http://telecom.gmu.edu](http://telecom.gmu.edu)
  - Contains:
    - News
    - Program Info
    - Frequently Asked Questions
  - Updated regularly – check often.
- Other important websites:
  - PatriotWeb: [https://patriotweb.gmu.edu](https://patriotweb.gmu.edu)
  - MyMason Portal: [https://mymasonportal.gmu.edu/](https://mymasonportal.gmu.edu/)
  - University Catalog: [http://catalog.gmu.edu](http://catalog.gmu.edu)
  - Volgenau School: [http://volgenau.gmu.edu](http://volgenau.gmu.edu)
Welcome Reception

- On Thursday, August 30
- From 4pm to 6pm
- In TCOM/CFRS program office
  - ENGR 3300
- Meet faculty, staff and other students.
- Enjoy light food and refreshments.

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