M.S.E. in Telecommunications & Networking Requirements (for students starting Fall 2012 and later)
Students must complete 10 course units, following the requirements below. If a Master’s thesis is done, it will count for 2 course units (2 C.U. of TCOM 597).

The four-part requirements are as follows:

A. Two (2) Required Courses
   TCOM 500 Introduction to Networks and Protocols
   TCOM 502 Advanced Networking Protocols

B. Four (4) Area Electives*:
   Three (3) TCOM courses
   One (1) TCOM or ESE course

C. One (1) Technical Elective:
   One course unit from any graduate offerings in TCOM, ESE, CIS, CIT, EAS**, or ENM.

D. Three (3) Other Electives:
   Three course units from the graduate courses offered in SEAS**, SAS***, or Wharton.

NOTES:

* Courses cross-listed with TCOM are to be taken as the TCOM section number. Any cross-listed ESE course to be applied as an Area Elective requirement must be taken as the ESE section number.

** Only the following EAS courses are allowed: EAS 504, 510, 545 and 546

*** SAS course(s) need advisor and graduate group chair approval. They should have technical/scientific content and relevance to the student’s program.

1. **Thesis Option**- Students who would like to complete a thesis may take **two (2) units of Thesis Research** (TCOM 597)
2. A maximum of **two CIT courses** are allowed for the MSE in TCOM degree
3. A maximum of **one course unit of Independent Study** (TCOM 599) is allowed
4. A maximum of **two graduate-level course units may be transferred** from another school to apply toward the MSE degree. These two courses should not have been used in fulfillment of an undergraduate degree.
5. **Lockheed-Martin Transfer credit**: Lockheed Martin students must petition for transfer credit in person, and bring a letter from the Company (your supervisor), clearly stating which Advanced Courses you completed and the final grade(s) awarded. All documents should be given to Betty Gentner, located in 111 Towne Building.
6. Full time Master’s degree students normally register for three courses per semester. Full-time status requires at least three courses per semester.
7. Students are required to maintain a 2.7 GPA to remain in good academic standing. A minimum GPA of 2.7 is required for graduation.
8. **Disallowed courses for any graduate degree in SEAS**: A reminder that no undergraduate level courses, including those in SEAS, may be taken for a graduate degree requirement. There are courses that appear at the graduate level that are being offered by other parts of the University that will **not** be approved for SEAS graduate degree requirements. These include courses being offered in specialized and professional training programs, such as the Organizational Dynamics Program, the Wharton Certificate Programs for Working Professionals, and the Wharton Evening School.
9. For further regulations, see the **ESE Graduate Student Handbook**: [http://www.ese.upenn.edu/grad/mse.html](http://www.ese.upenn.edu/grad/mse.html)