Syllabus

Course Name: Advanced Computer Networks

Teaching Materials: selected from the references and technical papers

Instructor: 林永松 (Rm. #808 of the 2nd Management College Building, 33661191), yslin@im.ntu.edu.tw

Grading Policy:

1. homework 15% (no late/cribbed homework shall be accepted)
2. midterm exam 35%
3. final report/presentation 50%
4. extra credits

Office Hours: by appointment via phone/email or after class meetings

Course Scope:

1. network technologies and services
2. trade-off between cost and performance
3. fundamental performance analysis techniques
4. fundamental algorithms
5. fundamental network optimization techniques
6. advanced topics in computer networks

Tentative Course Outline:

1. overview of fundamental networking
2. introduction to queueing theory and optimization techniques
3. routing and flow control in computer networks
4. network planning and capacity management
5. information security
6. biometrics
7. content-based information retrieval and filtering
8. special topics/talks

Remarks:

1. An FTP site will be set up for participants to upload and download course related materials.
2. Proper materials shall be selected from the references to achieve the objectives of the course. Supplementary materials outside the references may also be included in the course.
3. Active participation of all participants in the class meetings is highly encouraged.
4. Papers presented in the class should be selected from IEEE Transactions or with special approval from the Instructor.
5. Invited talks by distinguished speakers may be arranged.
6. Case studies on resource allocation and information security may be

arranged.

7. Plagiarism is strictly forbidden.

Textbook and References:

1. Andrew S. Tanenbaum, Computer Networks, 4rd Ed., carried (international edition) by 新月圖書公司 (reference)
2. D. Bertsekas and R. Gallager, Data Networks, 2nd Ed., Prentice-Hall. (reference)
3. D.G. Luenberger, Linear and Nonlinear Programming, Addison-Wesley. (reference)
4. M.S. Bazaraa, H.D. Sherali and C.M. Shetty, Nonlinear Programming - Theory and Algorithms, Wiley-Interscience. (reference)
5. L. Kleinrock, Queueing Systems Volume I: Theory, New York: Wiley, 1975-1976. (reference)