COURSE DESCRIPTION

Department and Course Number: COMP 6510
Course Title: Networked Multimedia Systems
Total Credits: 3
Required: No
Prerequisites: COMP 4320
Class meetings per week: 3 hours
Lab meetings per week: 0 hours
Course Coordinator: Dr. Chung-wei Lee
Date Prepared: February 12, 2004

Current Catalog Description:
Basic concepts, architecture, and design of networked multimedia systems.

Textbooks:
S. V. Raghavan and Satish K. Tripathi. 1998. *Networked Multimedia Systems: Concepts, Architecture, and Design*. Prentice Hall. ISBN 0-13-210642-6.

References:
Ralf Steinmetz and Klara Nahrstedt. 2004. *Multimedia Systems*. Springer-Verlag. ISBN 3-540-40867-3

Course Objectives:
1. Be able to apply concepts and techniques to networked multimedia system design.
2. Be able to implement key components of networked multimedia systems.
3. Be able to perform fundamental performance analysis on networked multimedia systems.

Prerequisites by Topic:
1. Fundamentals of operating systems
2. Fundamentals of computer networks
3. Familiarity with Java or C/C++

Topics Covered: (specify number of hours on each)
1. Multimedia systems primer (3 hours)
2. Multimedia systems requirements (3 hours)
3. Audio technology (3 hours)
4. Graphics and images (3 hours)
5. Video technology (3 hours)
6. Data compression (6 hours)
7. Resources and quality of service (3 hours)
8. Multimedia operating systems (3 hours)
9. Media server (3 hours)
10. Multimedia networks and protocols (9 hours)
11. Synchronization (3 hours)

12. Exams (3 hours)

Laboratory Projects: (specify number of weeks on each)
1. Data compression (3 weeks)
2. Multimedia system scheduling (3 weeks)

Oral and Written Communications:
All students are required to develop and apply program documentation skills as part of the course programming assignments.

Social and Ethical Issues:
None.

Theoretical Content:
Performance analysis techniques for multimedia compression techniques and multimedia server/network design are presented in the course.

Problem Analysis and Solution Design:
All students apply fundamental software engineering practices to analyze, design, implement, test, and document solutions to all programming assignments. Students apply the analysis and design skills already acquired to the development of software components for networked multimedia systems. Each component has stated requirements and students are responsible for applying a controlled, iterative process for development.