EE 4374 --- Operating Systems Design  
*Spring 2016*

**Instructor:** Dr. Michael McGarry  
Office: ENG 340  
Telephone: 915-747-6955  
Email: mpmcgarry@utep.edu

**Texts:**  
Operating System Concepts Essentials (2nd Edition)  
by Abraham Silberschatz, Peter Galvin, and Greg Gagne  
TCP/IP Sockets in C (2nd Edition)  
Michael Donahoo and Kenneth Calvert

**Optional Reference Texts:**  
The C Programming Language by Brian Kernighan and Dennis Ritchie  
UNIX Systems Programming: Communication, Concurrency and Threads  
by Kay Robbins and Steven Robbins

**Course Description:** Design and implementation of single and multiuser operating systems. Topics include OS structure, process management, interprocess communication within and between CPUs, memory management, file systems, and I/O. Contemporary operating systems provide design examples.

**Prerequisite:** EE 2372 Software Design I and EE 4379 Computer Arch. (C or better)

**Class Hours:** Tuesdays and Thursdays 3PM to 4:20PM, CCSB Room 1.0202

**Office Hours:** Tuesdays and Thursdays 1:30PM to 3PM, ENG A-340

**Course Outline:**

- **Week 1:** Introduction (Chap. 1)
- **Weeks 1-2:** Operating Systems Structures (Chap. 2)
- **Week 3:** Introduction to Processes/Threads (Chaps. 3 and 4)
- **Weeks 4-5:** Process Scheduling (Chap. 5)
- **Weeks 6-7:** Process Synchronization (Critical Section Problem) (Chap. 6)
- **Week 7:** Network Communication (Intro to Socket Programming) (Textbook 2)
- **Week 8:** Midterm Exam
- **Weeks 8-9:** Deadlocks: Characterization and Prevention (Chap. 7)
- **Weeks 10-11:** Memory Management (Chaps. 8 and 9)
- **Weeks 12-13:** File Systems (Chaps. 10 and 11)
- **Weeks 14-15:** Input/Output Systems (Chap. 13)
Grading:
Participation  5%
Homework/Quizzes  20%
Labs  25%
Midterm  25%
Final  25%

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