

8. *Course number and name*

CSC 415: Operating System Principles

9. *Credits and contact hours*

3 credits

Contact hours: 150 minutes of lecture sessions /week

10. *Instructor's or course coordinator's name*

Course coordinator: Hao Yue, Assistant Professor of Computer Science

11. *Text book, title, author, and year*

Operating System Concepts Essentials, Silberschatz et al., John Wiley and sons, current edition

a. *other supplemental materials*

Lecture slides

12. *Specific course information*

a. *brief description of the content of the course (catalog description)*

Operating system concepts: concurrent processes, basic synchronization techniques, deadlock, memory management, file systems, security, networks, distributed processing. Extra fee required.

b. *prerequisites or co-requisites*

MATH 324, PHYS 230, CSC 310 or CSC 256, and CSC 313 or CSC 340, with grades of C or better.

c. *indicate whether a required, elective, or selected elective course in the program*

Elective for Computer Engineering.

13. *Specific goals for the course*

a. *specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.*

Students completing the course successfully will be able to

d. Utilize processes and artifacts to work effectively in a team-oriented development Environment

e. Write code to manage system resources

f. Write and analyze programs with multiple processes and threads

g. Work with synchronization mechanisms and avoid deadlock

h. Demonstrate understanding of CPU scheduling mechanisms

i. Demonstrate understanding of virtual memory and memory management

j. Demonstrate understanding of file systems

b. *explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.*

Course addresses ABET Student Outcome(s): a, b, c, e, j, k.

14. *Brief list of topics to be covered*

1. Processes & Threads (Ch. 3 & 4)
2. Synchronization & Deadlock (Ch. 6)
3. CPU Scheduling (Ch. 5)
4. Main memory & virtual memory (Ch. 7 & 8)
5. File Systems (Ch. 9, 10, 12, as time permits)