**ABET Course Syllabus – CS4440**

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | CS4440 | **Credits** | 3 |
| **Title** | Introduction to Operating Systems | **Coordinator** | Jiang Guo |

**Course Information**

1. **Catalog Description:** Resource, memory and process management; concurrent processing; distributed systems; emphasis on some of the simple algorithms used to solve common problems encountered such as deadlocks, queue service, shared/distributed memory access.
2. **Prerequisites or co-requisites:** CS 2013.
3. **Contact Hours:** 3 hours/week
4. **Required/Elective:** This course is required in the BS program.

**Textbook**

Silberschatz, Galvin and Gagne, Operating System Concepts, Addison-Wesley.

**Course Goals**

The Student Learning Outcomes that are addressed by the course are:

* SLO #4. Students will have a fundamental understanding of computer systems.

Other outcomes of instruction:

At the end of the course, students will be

* Familiar with the main concepts of modern Operating Systems
* Familiar with interrelationships among users and hardware components
* Familiar with process and threads management
* Familiar with CPU scheduling,
* Familiar with process synchronization and deadlocks handling
* Familiar with memory management and storage management

**Topics Covered**

* Introduction to Operating System

Overview of the operating system components

Operating system Structures

* Process Management

Processes

Threads

CPU Scheduling

Process Synchronization

Deadlocks

* Memory Management

Basic Memory Management

Virtual Memory Management

* Storage Management

File System Interface

File System Implementation

Mass Storage Structure

I/O Systems

* Virtual Machines
* Linux systems
* Distributed systems