كلية الحاسبات و المعلومات

جامعة بنها
وحدة الضمان والجودة

Operating Systems Course Specifications

Faculty: Computer and Informatics
Department: Scientific Computing

Program(s) on which the course is given	**:**	Bachelor in Computer and Information Sciences
Major or Minor element of programs	**:**	Computer Science/Scientific Computing
Department offering the program	**:**	Scientific Computing
Department offering the course	**:**	Computer Science
Academic year / Level	**:**	**3**rd Year/BSc
Date of specification approval	**:**	

Basic Information

Title: Operating Systems **Code:** CSW355

Lecture: 3 hrs/week **Practical:** 2 hrs/week **Tutorial: ---**

Total: 5 hrs/week

Professional Information

1. Overall Aims of Course:

To teach the concepts and mechanisms employed in modern operating systems, including the

use of concurrent processing. To provide students with experience of programming using an OS application programming interface. To provide a foundation for further study in distributed systems.

2. Intended Learning Outcomes of Course (ILOs):

a. Knowledge & understanding:

a1- Explain and illustrate operating systems structure & components

a2- Explain Inter-process communication

a3- Give an account on multithreading & concurrency

a4- Explain application programming interfaces

a5- Summerize OS case studies

b. Intellectual skills:

b1. Critisize OS design alternatives

b2. Employ appropriate OS API services

c. Practical skills:

c1. Handle C programs that use the UNIX/LINUX API

c2. Handle programs that communicate via IPC

c3. Handle and inject multithreaded programs

c4. Design multithreaded & concurrent programs

d. Transferable skills:

d1. Present solutions for problems

d2. Evaluate and discuss alternatives

3. Contents:

Topic	No. of hours	Lecture	Tutorial/ Practical
Introduction	5	3	2
Computer-System Structure	5	3	2
Operating-System Structure	10	6	4
Processes	10	6	4
Threads	10	6	4
CPU Scheduling	10	6	4
Processes Synchronization	10	6	4
Deadlocks	10	6	4