INTRODUCTION TO OPERATING SYSTEMS

PROF. CHESTER REBERIO
Department of Computer Science and Engineering
IIT Madras

INTENDED AUDIENCE : B.E./Msc (Computer Science)

PRE-REQUISITES : Good knowledge of C, Computer Organization and Architecture, x86 Assembly level programming.

COURSE OUTLINE :

Operating systems (OS) provide the crucial interface between a computer's hardware and the applications that run on it. It allows us to write programs without bothering much about the hardware. It also ensures that the computer's resources such as its CPU, hard disk, and memory, are appropriately utilized. In this course, we dwell into how the OS manages to do all this in an efficient manner. Th is is an introductory course, for students with prior knowledge of computer organization. The course is based on an OS called xv6, which in many ways is similar to the Linux operating systems.

ABOUT INSTRUCTOR :

Prof. Chester Rebeiro is an Assistant Professor at IIT Madras. He completed his PhD from IIT Kharagpur and a post-oc from Columbia University. His research interests are in cryptography, system security, especially hardware and operating system security.

COURSE PLAN :

Week 1: Introduction

Week 2: Memory Management

Week 3: Processes

Week 4: Interrupts and Context Switching

Week 5: Scheduling

Week 6: Synchronization

Week 7: Deadlocks

Week 8: Operating System Security