

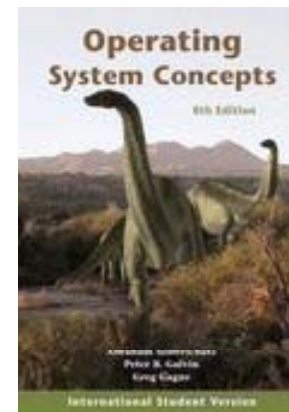
Introduction to Operating Systems

0. Preface

*National Chiao Tung Univ.
By: I-Chen Lin, Assistant Professor*

About the course

- ▶ **Course title:** Introduction to Operating Systems
- ▶ **Lectures:**
 - ▶ EC016, 10:10~12:00(Tues.) & 15:40~16:30 (Thu.)
- ▶ **Pre-requisites:**
 - ▶ Introduction to Computer
 - ▶ Computer programming skills in C/C++.
- ▶ **Text book:**
 - ▶ **A. Silberschatz, P.B. Galvin, G. Gagne, Operating System Concepts 8 Ed., John Wiley & Sons, Inc.**



About the course (cont.)

- ▶ Teacher: I-Chen Lin (林奕成), Assistant Professor
 - ▶ Email: ichenlin@cs.nctu.edu.tw
 - ▶ Office: EC 704
 - ▶ Research interests
 - ▶ Computer Graphics, Animation, image-based and interactive 3D modeling



About the course (cont.)

▶ TA:

- ▶ 李蕙芸 (vbfishbaby@gmail.com) 、
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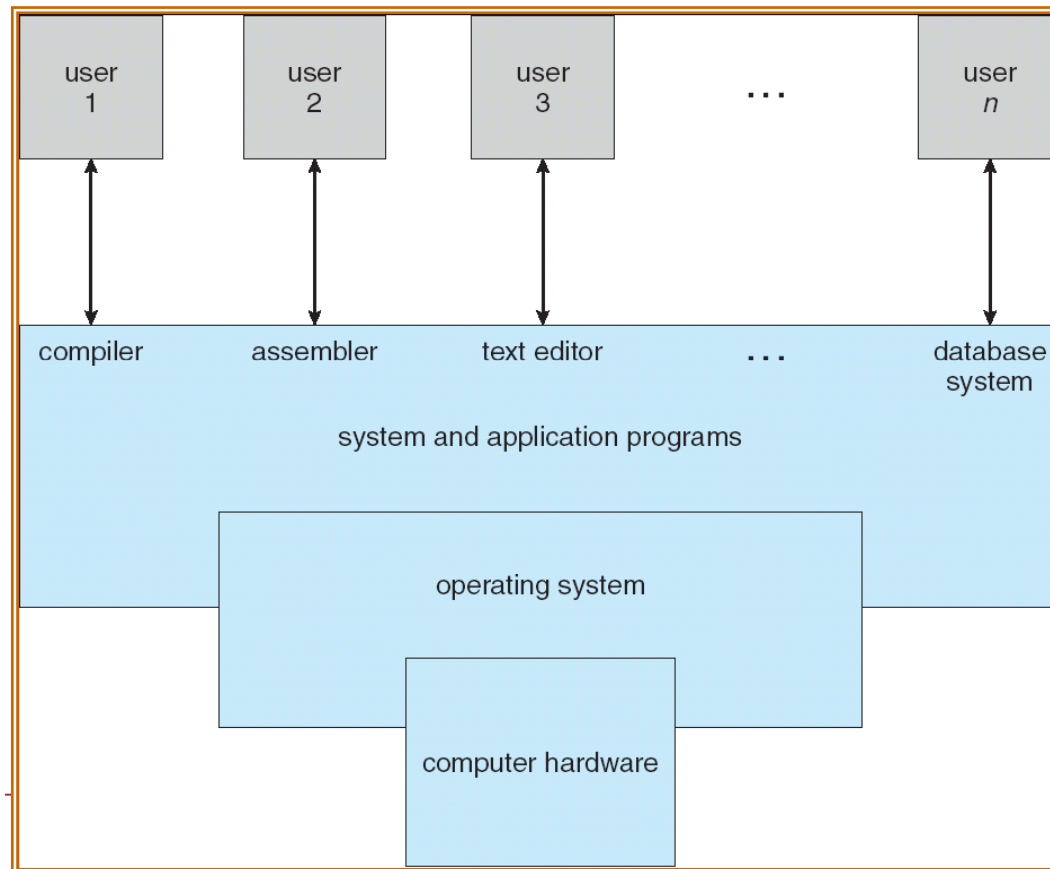
▶ Course web page:

- ▶ <http://caig.cs.nctu.edu.tw/course/course.html>



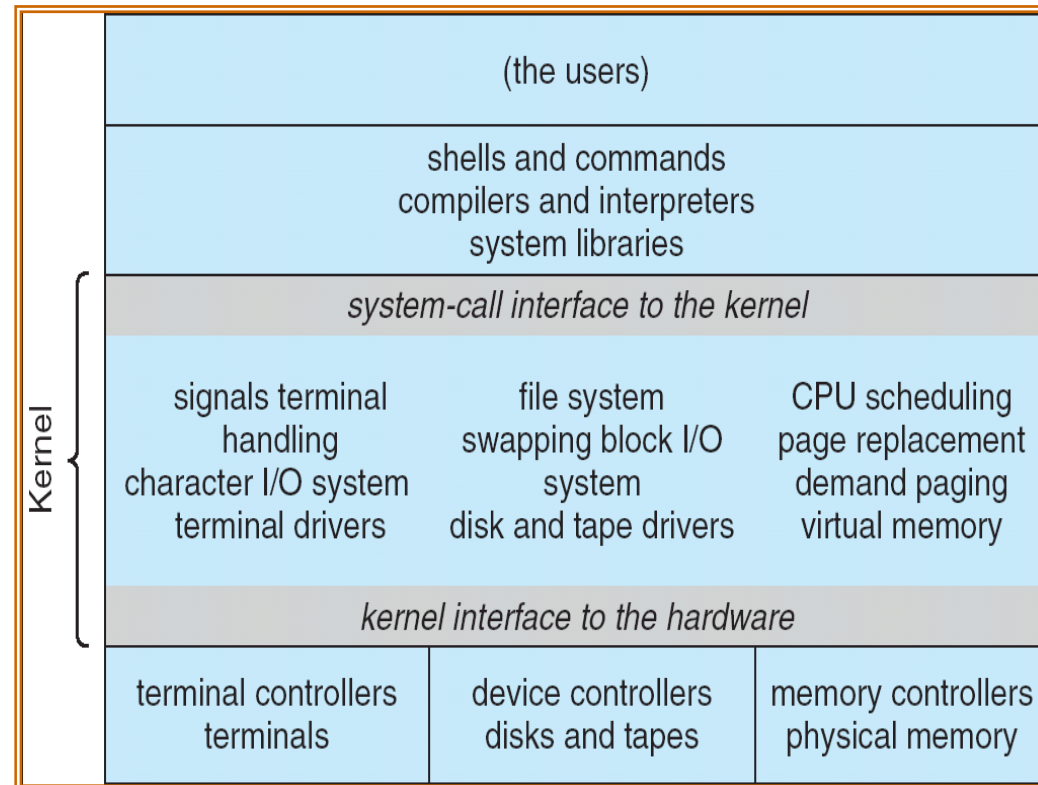
The syllabus

- ▶ Introduction.
 - ▶ What's OS?
 - ▶ OS for various purpose systems.



The syllabus (cont.)

- ▶ System structures.
 - ▶ Hardware topics for understanding OS.
 - ▶ Operating-system structures.



▶ UNIX System Structure

The syllabus (cont.)

- ▶ Process and threads
 - ▶ Process-concept
 - ▶ Threads
 - ▶ Process scheduling
- ▶ Synchronization.
 - ▶ Critical sections, semaphores, etc.
 - ▶ Deadlocks.

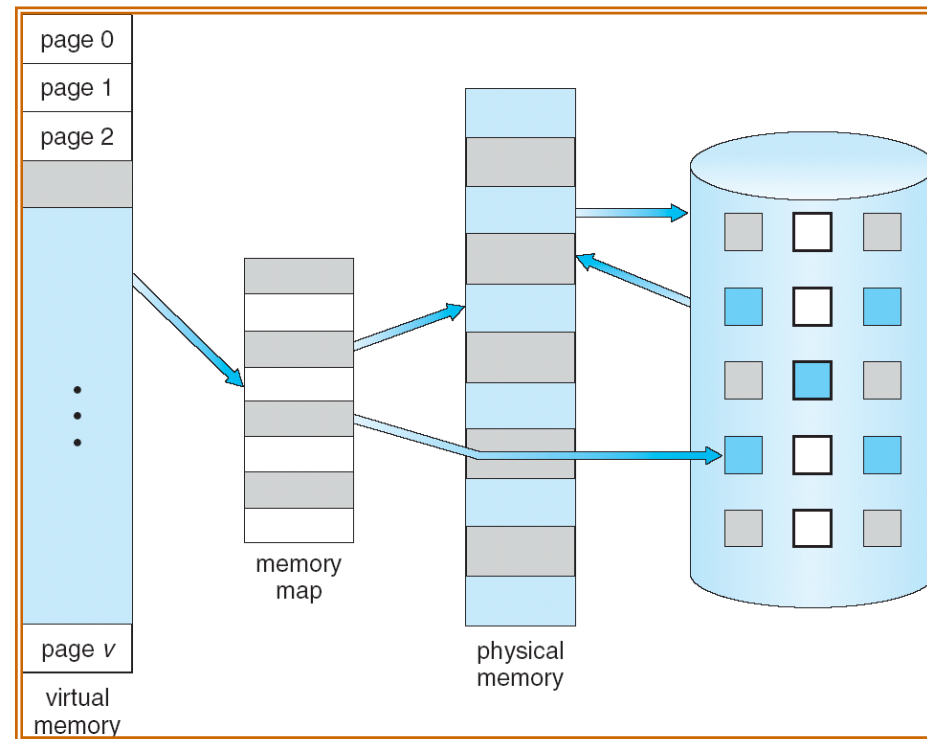


The screenshot shows the Windows Task Manager window titled "Windows 工作管理員". The "處理程序" (Processes) tab is active, displaying a list of running processes. The process "POWERPNT.EXE" is highlighted in blue. The status bar at the bottom indicates "處理程序: 58", "CPU 使用率: 2%", and "認可使用: 503K / 2460K".

影像名稱	PID	使用者名稱	C...	CPU 時間	記憶體...	執行緒	IO 讀取...
DotlXcfig.exe	3844	ichen	00	0:00:00	8,476 K	14	123
EOUWiz.exe	492	ichen	00	0:00:00	6,284 K	3	5
EvtEng.exe	1308	SYSTEM	00	0:00:00	7,968 K	8	97
explorer.exe	784	ichen	00	0:01:07	39,580 K	17	8,480
HControl.exe	1628	ichen	00	0:00:00	6,124 K	3	3
iFirmwv.exe	524	ichen	00	0:00:00	12,636 K	4	348
IFKSPMG.T.exe	804	SYSTEM	00	0:00:00	8,984 K	10	399
IFKTCs.exe	1160	SYSTEM	00	0:00:00	7,040 K	7	88
lsass.exe	952	SYSTEM	00	0:00:02	7,780 K	21	13,398
LSSvc.exe	1376	SYSTEM	00	0:00:00	1,820 K	2	2
mdm.exe	1604	SYSTEM	00	0:00:00	3,208 K	5	5
mvsvc32.exe	548	SYSTEM	00	0:00:00	3,832 K	3	9
POWERPNT.EXE	560	ichen	00	0:01:18	10,936 K	9	12,298
PSDrt.exe	3052	ichen	00	0:00:02	17,380 K	12	4,732
PSDsvc.EXE	608	SYSTEM	00	0:00:00	2,340 K	4	2
realsched.exe	1580	ichen	00	0:00:00	192 K	4	11
ResSvc.exe	668	SYSTEM	00	0:00:00	3,268 K	3	5

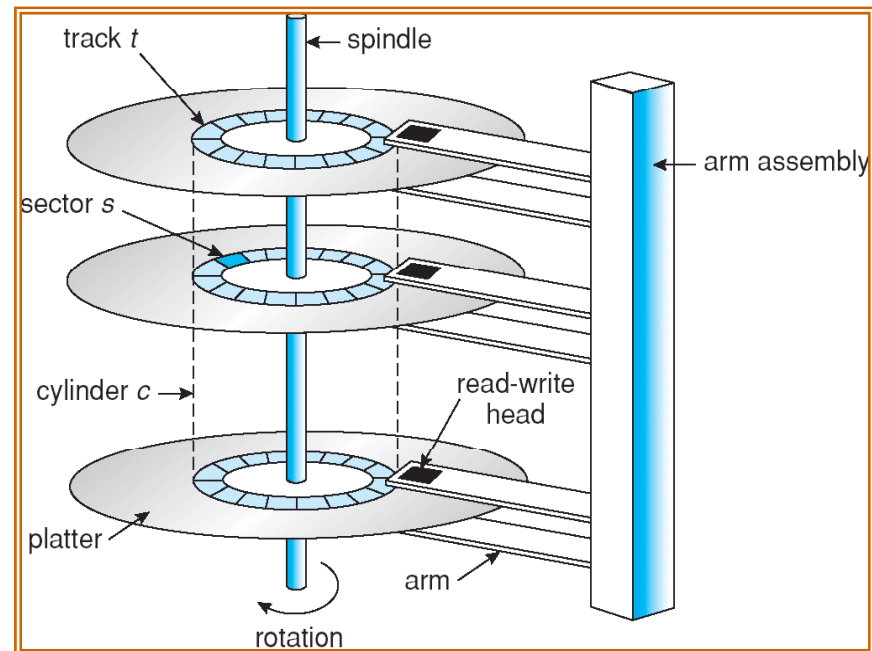
The syllabus (cont.)

- ▶ Memory
 - ▶ Memory management.
 - ▶ Allocation and address
 - ▶ Page and segmentation
 - ▶ Virtual memory.



The syllabus (cont.)

- ▶ File systems.
- ▶ Storage structure
- ▶ Disk scheduling



About the course (cont.)

- ▶ We'll introduce the concepts of operating systems.
- ▶ We will have homework and projects
 - ▶ Unix/Linux multi-threading programming.
 - ▶ Windows multi-threading project.
 - ▶ Manager improvement on windows 2003 kernel.
- ▶ Grades:
 - ▶ Homework: 15%
 - ▶ Midterm: 25%
 - ▶ Final exam: 25%
 - ▶ Program projects x2: 30%
 - ▶ Bonus: class participation



About the course (cont.)

