Tamkang University Academic Year 107, 2nd Semester Course Syllabus

Course Title	OPERATING SYSTEMS		Instructor	HUANG-WEN HUANG
Course Class	TQICB2A DIVISION OF SOFTWARE ENGINEERING, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY (ENGLISH-TAUGHT PROGRAM), 2A		Details	◆ Required ◆ One Semester ◆ 3 Credits

D e p a r t m e n t a l   A i m   o f   E d u c a t i o n

Cultivate professional talents in developing and applying information system in various fields.

D e p a r t m e n t a l   c o r e   c o m p e t e n c e s

A. Capability of computer program coding, process planning, and problem solving

B. Capability of applying basic mathematics and information technology related mathematics

C. Capability of applying knowledge of internet structure and protocol in communication system

D. Capability of developing information system

E. Capability of integrating information system

Course Introduction	The purpose of this course is to describe the theory of operating systems. It concentrates on each of the "managers" in turn and shows how they work together. Then it introduces network organization concepts, security, ethics, and management of network functions. In the second half-semester we will introduce actual operating systems, how they apply the theories presented in the first half and how they compare with each other.

The Relevance among Teaching Objectives, Objective Levels and Departmental core competences

I.Objective Levels (select applicable ones) :
 (i) Cognitive Domain   : C1-Remembering,   C2-Understanding,   C3-Applying,
                           C4-Analyzing,   C5-Evaluating,   C6-Creating
 (ii) Psychomotor Domain : P1-Imitation,   P2-Mechanism,   P3-Independent Operation,
                           P4-Linked Operation, P5-Automation,   P6-Origination
 (iii) Affective Domain : A1-Receiving   A2-Responding,   A3-Valuing,
                           A4-Organizing,   A5-Charaterizing,   A6-Implementing

II.The Relevance among Teaching Objectives, Objective Levels and Departmental core competences :
 (i) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objective. Each objective should correspond to the objective level(s) of ONLY ONE of the three domains.
 (ii) If more than one objective levels are applicable for each learning domain, select the highest one only. (For example, if the objective levels for Cognitive Domain include C3,C5,and C6, select C6 only and fill it in the boxes below. The same rule applies to Psychomotor Domain and Affective Domain.)
 (iii) Determine the Departmental core competences that correspond to each teaching objective. Each objective may correspond to one or more Departmental core competences at a time. (For example, if one objective corresponds to three Departmental core competences: A,AD, and BEF, list all of the three in the box.)

No.	Teaching Objectives	Relevance	
		Objective Levels	Departmental core competences
1	Students are able to get familiar with all "managers" in operating systems	C2	E
2	Students are able to understand operation principles of all managers in operating systems.	C2	E
3	Students are able to analyze manager's functionalities in operating systems.	C2	E
4	Students are able to integrate or understand all parts in operating systems as a whole.	C2	E
5	Students are able to understand the importance of resource management from operating systems and their performance.	C2	E
6	Students are able to get familiar with recent technologies in operating systems.	A1	E
7	Enhancing students' ability to write read and speak technical English especially in the operating systems theory.	P2	E

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Students are able to get familiar with all "managers" in operating systems	Lecture, Discussion	Written test, Report, Participation

2	Students are able to understand operation principles of all managers in operating systems.	Lecture	Written test
3	Students are able to analyze manager's functionalities in operating systems.	Lecture	Written test
4	Students are able to integrate or understand all parts in operating systems as a whole.	Lecture	Written test
5	Students are able to understand the importance of resource management from operating systems and their performance.	Lecture	Report
6	Students are able to get familiar with recent technologies in operating systems.	Lecture	Written test
7	Enhancing students' ability to write read and speak technical English especially in the operating systems theory.	Lecture, Discussion	Practicum

This course has been designed to cultivate the following essential qualities in TKU students	
Essential Qualities of TKU Students	Description
◇ A global perspective	Helping students develop a broader perspective from which to understand international affairs and global development.
◆ Information literacy	Becoming adept at using information technology and learning the proper way to process information.
◆ A vision for the future	Understanding self-growth, social change, and technological development so as to gain the skills necessary to bring about one's future vision.
◇ Moral integrity	Learning how to interact with others, practicing empathy and caring for others, and constructing moral principles with which to solve ethical problems.
◆ Independent thinking	Encouraging students to keenly observe and seek out the source of their problems, and to think logically and critically.
◇ A cheerful attitude and healthy lifestyle	Raising an awareness of the fine balance between one's body and soul and the environment; helping students live a meaningful life.
◆ A spirit of teamwork and dedication	Improving one's ability to communicate and cooperate so as to integrate resources, collaborate with others, and solve problems.
◇ A sense of aesthetic appreciation	Equipping students with the ability to sense and appreciate aesthetic beauty, to express themselves clearly, and to enjoy the creative process.

Course Schedule			
Week	Date	Subject/Topics	Note

1	108/02/18~ 108/02/24	Introduction to operating systems(1.1);A Brief Story of Machine Hardware(1.8)	
2	108/02/25~ 108/03/03	Memory Management: Early Systems (2.1); Single-User Contiguous Scheme(2.2)	
3	108/03/04~ 108/03/10	Fixed Partitions (2.3); Dynamic Partitions (2.4);	
4	108/03/11~ 108/03/17	Memory Management: Virtual Memory (3.1)	Shown in the Parentheses are corresponding sections in the textbook.
5	108/03/18~ 108/03/24	Page Replacement Policies (3.4);Segmented Memory Allocation (3.5)Segmented/Demand Paged Memory Allocation (3.6)	
6	108/03/25~ 108/03/31	Processor Management(4.1); Job Scheduling (4.2);	
7	108/04/01~ 108/04/07	Process Scheduling Policies (4.4); Process Scheduling Algorithms (4.5)	
8	108/04/08~ 108/04/14	Process Management (5.1); Deadlock (5.2)	
9	108/04/15~ 108/04/21	Conditions for Deadlocks (5.3); Seven Cases of Deadlocks (5.4)	
10	108/04/22~ 108/04/28	Midterm Exam Week	
11	108/04/29~ 108/05/05	Solutions to midterm; Concurrent Processes (6.1)	
12	108/05/06~ 108/05/12	Device Management (7.1)	
13	108/05/13~ 108/05/19	RAID (7.2)	
14	108/05/20~ 108/05/26	FILE Management (8.1)	
15	108/05/27~ 108/06/02	Access Methods (8.2)	
16	108/06/03~ 108/06/09	UNIX	
17	108/06/10~ 108/06/16	WINDOWS; LINUX; ANDROID	
18	108/06/17~ 108/06/23	Final Exam Week	
Requirement		1.平時評量 means term project or small test. 10%	

Teaching Facility	Computer, Projector
Textbook(s)	Ida M. Flynn, Ann McIver McHoes, Understanding Operating Systems, Fourth Edition, Course Technology, 2006, ISBN 0-534-42366-3.
Reference(s)	1. Jose M. Garrido, and Richard Schlesinger, Principles of Modern Operating Systems, Jones and Bartlett Publications, Inc. 2008.
Number of Assignment(s)	**3** (Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：10.0 % ◆ Midterm Exam： 25.0 % ◆ Final Exam： 25.0 % ◆ Other〈project and Homework〉：30.0 %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . ※ **Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.**