

## Tamkang University Academic Year 112, 1st Semester Course Syllabus

Course Title	COMPUTER ORGANIZATION	Instructor	FU-YI HUNG
Course Class	TEIDB2A DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM), 2A	Details	<ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Required</li> <li>◆ One Semester</li> </ul>
Relevance to SDGs	SDG4 Quality education		
<b>Departmental Aim of Education</b>			
<ul style="list-style-type: none"> <li>I. Comprehend professional knowledge.</li> <li>II. Acquire mastery of Practical Skills.</li> <li>III. Establish creative achievement.</li> </ul>			
<b>Subject Departmental core competences</b>			
<ul style="list-style-type: none"> <li>A. Programming and application ability.(ratio:15.00)</li> <li>B. Mathematical reasoning ability.(ratio:15.00)</li> <li>C. Implementing computer systems ability.(ratio:40.00)</li> <li>D. Computer networking application skills.(ratio:15.00)</li> <li>E. Professional skills for information technology (IT) industry.(ratio:15.00)</li> </ul>			
<b>Subject Schoolwide essential virtues</b>			
<ul style="list-style-type: none"> <li>1. A global perspective. (ratio:10.00)</li> <li>2. Information literacy. (ratio:30.00)</li> <li>3. A vision for the future. (ratio:10.00)</li> <li>4. Moral integrity. (ratio:15.00)</li> <li>5. Independent thinking. (ratio:20.00)</li> <li>6. A cheerful attitude and healthy lifestyle. (ratio:5.00)</li> <li>7. A spirit of teamwork and dedication. (ratio:5.00)</li> <li>8. A sense of aesthetic appreciation. (ratio:5.00)</li> </ul>			

Course Introduction	The goal of this course is to learn how a computer works and why it performs as it does. The focus of this course is on the interaction between hardware and software that includes instruction set architecture, arithmetic for computers, the processor, memory hierarchy and I/O devices.
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**The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.**

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II. Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III. Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	To understand how computers are constructed by a set of functional units	Cognitive
2	To understand how computer functional units operate and interact	Cognitive
3	To understand how the factors affect computer performance	Cognitive
4	To understand how computations are performed at the machine level	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDE	12345678	Lecture	Testing
2	ABCDE	12345678	Lecture	Testing
3	ABCDE	12345678	Lecture	Testing
4	ABCDE	12345678	Lecture	Testing

Course Schedule			
Week	Date	Course Contents	Note

1	112/09/11 ~ 112/09/17	Computer Abstractions and Technology	
2	112/09/18 ~ 112/09/24	Computer Abstractions and Technology	
3	112/09/25 ~ 112/10/01	Instructions: Language of the Computer	
4	112/10/02 ~ 112/10/08	Instructions: Language of the Computer	
5	112/10/09 ~ 112/10/15	Instructions: Language of the Computer	
6	112/10/16 ~ 112/10/22	Arithmetic for Computers	
7	112/10/23 ~ 112/10/29	Arithmetic for Computers	
8	112/10/30 ~ 112/11/05	Arithmetic for Computers	
9	112/11/06 ~ 112/11/12	Midterm Exam Week	
10	112/11/13 ~ 112/11/19	The Processor	
11	112/11/20 ~ 112/11/26	The Processor	
12	112/11/27 ~ 112/12/03	The Processor	
13	112/12/04 ~ 112/12/10	The Processor	
14	112/12/11 ~ 112/12/17	Large and Fast: Exploiting Memory Hierarchy	
15	112/12/18 ~ 112/12/24	Large and Fast: Exploiting Memory Hierarchy	
16	112/12/25 ~ 112/12/31	Large and Fast: Exploiting Memory Hierarchy	
17	113/01/01 ~ 113/01/07	Final Exam Week	
18	113/01/08 ~ 113/01/14	Flex week, learning activities should be arranged.	
Key capabilities	Information Technology		
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)		
Distinctive teaching			

Course Content	Computer programming or Computer language (students have hands-on experience in related projects)
Requirement	<p>Cheating or plagiarism will receive a semester grade of zero for this course. 作弊或抄襲者學期總成績為零分。</p> <p>If a student's class absence reaches one-third of the total class hours (in a semester) for a particular course, the course instructor will notify the Office of Academic Affairs, and the student will not be allowed to take part in the remaining course examinations and will receive a semester grade (for that course) of zero. 學生對某一科目之缺課總時數達該科全學期授課時數三分之一。經該科教師通知教務處時即不准參加該科目之考試。該科目學期成績以零分計算。</p>
Textbooks and Teaching Materials	<p>Using teaching materials from other writers:Textbooks Name of teaching materials: Computer Organization and Design: The Hardware/Software Interface, by David Patterson and John Hennessy, Elsevier, 5th Edition, 2014.</p>
References	<p>Computer Organization and Architecture: Designing for Performance, by William Stallings, Prentice Hall, 11th Edition, 2018 計算機組織與設計, David Patterson and John Hennessy 著, 鍾崇斌 譯, 東華書局, 2015</p>
Grading Policy	<p>◆ Attendance : 10.0 %    ◆ Mark of Usual : 26.0 %    ◆ Midterm Exam : 22.0 % ◆ Final Exam : 22.0 % ◆ Other &lt; Assignments &gt; : 20.0 %</p>
Note	<p>This syllabus may be uploaded at the website of Course Syllabus Management System at <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a>.</p> <p><b>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b></p>