

## Tamkang University Academic Year 109, 1st Semester Course Syllabus

Course Title	DATA STRUCTURE & PROCESSING	Instructor	LIN IN-HO
Course Class	TQIDB2A DIVISION OF APPLIED INFORMATICS, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY (ENGLISH TAUGHT PROGRAM), 2A	Details	<ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Required</li> <li>◆ One Semester</li> </ul>
Departmental Aim of Education			
Cultivate professional talents in developing and applying information system in various fields.			
Subject Departmental core competences			
A. Capability of computer program coding, process planning, and problem solving(ratio:100.00)			
Subject Schoolwide essential virtues			
2. Information literacy. (ratio:70.00)			
5. Independent thinking. (ratio:20.00)			
8. A sense of aesthetic appreciation. (ratio:10.00)			
Course Introduction	<p>A data structure is a collection of data values, it is a data organization, management, and storage format that enables efficient access and modification.</p> <p>This course focus on using C language based data structure algorithm to solve data processing problem for science and engineering applications, that emphasize on data storage, fetch, algorithms design and complexity evaluation.</p>		

**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 impart the basic concepts of data structures and algorithms	Cognitive
2	To understand concepts about searching and sorting techniques	Affective
3	To Understand basic concepts about stacks,queues,lists,trees and graphs	Affective
4	To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures	Psychomotor

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	A	258	Lecture, Practicum	Testing, Practicum
2	A	258	Lecture, Discussion, Practicum	Testing, Practicum, Report(including oral and written)
3	A	258	Lecture, Discussion, Practicum	Testing, Practicum, Report(including oral and written)
4	A	258	Lecture, Discussion, Practicum	Testing, Study Assignments, Practicum, Report(including oral and written)

**Course Schedule**

Week	Date	Course Contents	Note
1	109/09/14 ~ 109/09/20	Introduction · Basic Concepts	
2	109/09/21 ~ 109/09/27	Basic Concepts : Performance Analysis and Measurement	
3	109/09/28 ~ 109/10/04	Arrays and Structures	Lab.1, HW.#1

4	109/10/05 ~ 109/10/11	Stacks and Queues	Lab.2 , Quiz1
5	109/10/12 ~ 109/10/18	Linked Lists(1)	Lab 3, HW.#2
6	109/10/19 ~ 109/10/25	Linked Lists(2)	Lab.4
7	109/10/26 ~ 109/11/01	Trees(1)	Lab.5, Quiz2
8	109/11/02 ~ 109/11/08	Trees(2)	Lab.6, HW.#3
9	109/11/09 ~ 109/11/15	Trees(3)	Lab.7
10	109/11/16 ~ 109/11/22	Midterm Exam Week	
11	109/11/23 ~ 109/11/29	Graphs(1)	Lab.8, HW.#4
12	109/11/30 ~ 109/12/06	Graphs(2)	Lab.9, Quiz3
13	109/12/07 ~ 109/12/13	Sorting(1)	Lab.10, HW.#5
14	109/12/14 ~ 109/12/20	Sorting(2)	Lab.11, Quiz4
15	109/12/21 ~ 109/12/27	Hashing	Lab.12, HW.6
16	109/12/28 ~ 110/01/03	PRIORITY QUEUES	
17	110/01/04 ~ 110/01/10	SEARCH TREES	
18	110/01/11 ~ 110/01/17	Final Exam Week	
Requirement			
Teaching Facility		Computer, Projector	
Textbooks and Teaching Materials		Fundamentals of Data Structures in C 2/e (Horowitz, Sahni, Anderson Freed,) 開發圖書 · <a href="http://www.silicon-press.com/books/isbn.9780929306407/index.html">http://www.silicon-press.com/books/isbn.9780929306407/index.html</a>	
References		Data structures and Algorithm Analysis in C (Mark Allen Weiss)	
Number of Assignment(s)		6 (Filled in by assignment instructor only)	
Grading Policy		◆ Attendance : 20.0 %   ◆ Mark of Usual : 20.0 %   ◆ Midterm Exam : 20.0 % ◆ Final Exam : 20.0 % ◆ Other (Homeworks and Lab. ) : 20.0 %	

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>
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