

Tamkang University Academic Year 103, 1st Semester Course Syllabus

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| Course Title | PROGRAM DESIGN | Instructor | LIN IN-HO |
| Course Class | TQIBB1A DIVISION OF APPLIED INFORMATICS, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY, 1A | 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 primary purpose of this course is to help students to learn and develop their understanding of the theory and practice of computer programming, focusing on techniques of program development using the C++ programming language. Upon satisfactory completion of this course, students will: •know the syntax and Semantics, program development process, proper use of control structures, input/output, looping, functions, and arrays in the C++ programming language. •be familiar with problem solving techniques commonly used in beginning programming | | |
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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-Characterizing, 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 | Basic Concept of computer programming language and syntax | C1 | A |
| 2 | To understand how C++ program is composed of one or more subprograms To understand the concept of a data type | C3 | A |
| 3 | know debugging and testing techniques for software development | P4 | A |
| 4 | be familiar with problem solving techniques commonly used in beginning programming | P6 | A |

Teaching Objectives, Teaching Methods and Assessment

| No. | Teaching Objectives | Teaching Methods | Assessment |
|-----|--|--------------------------------|--|
| 1 | Basic Concept of computer programming language and syntax | Lecture, Discussion, Practicum | Practicum, Participation |
| 2 | To understand how C++ program is composed of one or more subprograms To understand the concept of a data type | Lecture, Discussion, Practicum | Practicum, Participation, Quiz |
| 3 | know debugging and testing techniques for software development | Lecture, Practicum | Written test, Practicum, Participation |
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| 4 | be familiar with problem solving techniques commonly used in beginning programming | Lecture, Discussion, Practicum | Written test, Practicum, Participation |
| 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 | 103/09/15 ~ 103/09/21 | Introduction to Computers and C++ Programming | |
| 2 | 103/09/22 ~ 103/09/28 | Overview of Programming and Problem Solving(1) | |
| 3 | 103/09/29 ~ 103/10/05 | Overview of Programming and Problem Solving(2) | |
| 4 | 103/10/06 ~ 103/10/12 | C++ Syntax and Semantics, and the Program Development Process(1) | |
| 5 | 103/10/13 ~ 103/10/19 | C++ Syntax and Semantics, and the Program Development Process(2) | |
| 6 | 103/10/20 ~ 103/10/26 | Numeric Types, Expressions, and Output(1) | |
| 7 | 103/10/27 ~ 103/11/02 | Numeric Types, Expressions, and Output(2) | |
| 8 | 103/11/03 ~ 103/11/09 | Program Input and the Software Design Process(1) | |
| 9 | 103/11/10 ~ 103/11/16 | Program Input and the Software Design Process(2) | |
| 10 | 103/11/17 ~ 103/11/23 | Midterm Exam Week | |

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| 11 | 103/11/24 ~ 103/11/30 | Looping(1) | |
| 12 | 103/12/01 ~ 103/12/07 | Looping(2) | |
| 13 | 103/12/08 ~ 103/12/14 | Additional Control Structures(1) | |
| 14 | 103/12/15 ~ 103/12/21 | Additional Control Structures(2) | |
| 15 | 103/12/22 ~ 103/12/28 | Functions(1) | |
| 16 | 103/12/29 ~ 104/01/04 | Functions(2) | |
| 17 | 104/01/05 ~ 104/01/11 | Functions(3) | |
| 18 | 104/01/12 ~ 104/01/18 | Final Exam Week | |
| Requirement | 1. English as Teaching Language(本課程採英語授課) 2. 「Moodle教學管理系統」網址： http://moodle.learning.tku.edu.tw 3. 非法影印是違法的行為。請使用正版教科書，勿非法影印他人著作，以免觸法。 | | |
| Teaching Facility | Computer, Projector | | |
| Textbook(s) | Programming and Problem Solving With C++ (Sixth Ed.) by Nell Dale and Chip Weems | | |
| Reference(s) | Absolute C++ by Walter Savitch (Fifth Edition) 開發圖書代理 Visual C++ 2008 How to Program (Deitel) 全華圖書代理 http://www.cppreference.com/wiki/http://www.cplusplus.com/reference/ | | |
| Number of Assignment(s) | 6 (Filled in by assignment instructor only) | | |
| Grading Policy | ◆ Attendance : 10.0 % ◆ Mark of Usual : 30.0 % ◆ Midterm Exam : 20.0 % ◆ Final Exam : 20.0 % ◆ Other < Lab. > : 20.0 % | | |
| 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. | | |