

Academic Org: Dept of Computer Sci & Engg – Subject: Computer Science

**Course:** CSCI1540      **Course ID:** 010473      **Eff Date:** 2024-07-01      **Crse Status:** Active      **Apprv. Status:** Approved      **[Course Rev]**  
Fundamental Computing with C++ 基本計算學 (C++語言)

This course introduces fundamental computing principles, problem-solving methods and algorithm development, simple data structures, illustrative applications. The C++ programming language will be used.

本科介紹基本計算學原理、問題求解方法及算法開發、簡單數據結構、應用示例。本科使用高級程序設計語言"C++"講授。

**Grade Descriptor:**      A

EXCELLENT – exceptionally good performance and far exceeding expectation in all or most of the course learning outcomes; demonstration of superior understanding of the subject matter, the ability to analyze problems and apply extensive knowledge, and skillful use of concepts and materials to derive proper solutions.

有關等級說明的資料，請參閱英文版本。

B

GOOD – good performance in all course learning outcomes and exceeding expectation in some of them; demonstration of good understanding of the subject matter and the ability to use proper concepts and materials to solve most of the problems encountered.

有關等級說明的資料，請參閱英文版本。

C

FAIR – adequate performance and meeting expectation in all course learning outcomes; demonstration of adequate understanding of the subject matter and the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

D

MARGINAL – performance barely meets the expectation in the essential course learning outcomes; demonstration of partial understanding of the subject matter and the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

F

FAILURE – performance does not meet the expectation in the essential course learning outcomes; demonstration of serious deficiencies and the need to retake the course.

有關等級說明的資料，請參閱英文版本。

**Equivalent Offering:**

**Units:** 3 (Min) / 3 (Max) / 3 (Acad Progress)

**Grading Basis:** Graded

**Repeat for Credit:** N

**Multiple Enroll:** N

**Course Attributes:**

**Topics:**

**COURSE OUTCOMES**

**Learning Outcomes:**

- At the end of the course of studies, students will have acquired the ability to
1. write, understand, compile and debug C++ programs;
  2. write programs using the basic programming elements such as variables, data types, selection and looping control structures, functions, and arrays;
  3. understand the basic concepts of call-by value, call-by-reference and function overloading;
  4. perform dynamic memory allocation and manage pointers;
  5. write applications using elementary data structures such as 2-D array and strings, etc.;

**Course Syllabus:**

This course introduces fundamental computing principles, problem-solving methods and algorithm development, simple data structures, illustrative applications. The C++ programming language will be used.

**Assessment Type:**

Essay test or exam : 60%  
Others : 40%

**Feedback for Evaluation:**

1. Midterm and final course evaluation
2. Exam
3. In class informal survey

**Required Readings:**

nil

**Recommended Readings:**

1. Walter Savitch, Problem Solving with C++ (6th edition), Addison-Wesley. 2006
2. Bjarne Stroustrup, The C++ Programming Language (3rd Edition), Addison-Wesley.
3. Stephen Prata, C++ Primer Plus (5th Edition), Sams.

**OFFERINGS**

1. CSCI1540 Acad Organization=CSD; Acad Career=UG

**COMPONENTS**

LEC : Size=30; Final Exam=Y; Contact=3  
TUT : Size=30; Final Exam=N; Contact=1

**ENROLMENT REQUIREMENTS**

1. CSCI1540

**Enrollment Requirement Group:**

Not for students who have taken AIST1110 or CSCI1020 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1520 or CSCI1530 or CSCI1550 or ESTR1100 or ESTR1102

**New Enrollment Requirement(s):**

Exclusion = Change from "AIST1110 or CSCI1020 or CSCI1110 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1520 or CSCI1530 or ESTR1100 or ESTR1102" to "AIST1110 or CSCI1020 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1520 or CSCI1530 or CSCI1550 or ESTR1100 or ESTR1102"

**Additional Information**

eLearning hrs for blended cls	0
VTL-Onsite face-to-face hrs	0
VTL-Online synch. hrs	0
VTL-Online asynch. hrs	0
No. of micro-modules	0
Research components (UG)	0%

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