

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

**Course:** CSCI1520      **Course ID:** 002566      **Eff Date:** 2024-07-01      **Crse Status:** Active      **Apprv. Status:** Approved      **[Course Rev]**  
Computer Principles and C++ Programming 計算機原理及C++程序設計

This course introduces computer programming in C++. Students will learn the functional elements of a computer system, object-oriented programming concepts, problem solving and creation of computer applications. Students will be able to apply these computing skills in various disciplines. This course also provides a foundation to further study in advanced computing topics.

本科介紹C++計算機程序編寫。學生將學習計算機系統的基本運作單元，面向對象程序設計概念，問題解決方案，並親自建立應用程序。學生將能夠應用這些計算技術於不同的學術領域上，也為進階的計算機科學學習打好根基。

**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:**

1. Be able to write, understand, compile and debug C++ programs
2. Be able to write programs using the basic programming elements such as variables, data types, selection and looping control structures, functions, and arrays
3. Be able to implement and instantiate classes, and invoke methods
4. Be able to analyze, design and implement a solution to solve a problem by means of programming

**Course Syllabus:**

This course introduces computer programming in C++. Students will learn the functional elements of a computer system, object-oriented programming concepts, problem solving and creation of computer applications. Students will be able to apply these

computing skills in various disciplines. This course also provides a foundation to further study in advanced computing topics.

**Assessment Type:**  
Others : 30%  
Short answer test or exam : 70%

**Feedback for Evaluation:**

1. Course evaluation and questionnaire
2. Reflection of teachers (including evidence from assessment)
3. Results of assignments and examination
4. Question-and-Answer sessions during class
5. Student consultation during office hours or online

**Required Readings:**  
nil

**Recommended Readings:**

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

#### OFFERINGS

1. CSCI1520 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. CSCI1520 **Enrollment Requirement Group:**  
Not for students who have taken AIST1110 or CSCI1020 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1530 or CSCI1540 or CSCI1550 or ENGG1110 or ESTR1002 or ESTR1100 or ESTR1102

**New Enrollment Requirement(s):**  
Exclusion = Change from "AIST1110 or CSCI1020 or CSCI1110 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1530 or CSCI1540 or ENGG1100 or ENGG1110 or ENGG2600 or ENGG2601 or ESTR1000 or ESTR1002 or ESTR1100 or ESTR1102 or ESTR2008" to

"AIST1110 or CSCI1020 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1530 or CSCI1540 or CSCI1550 or ENGG1110  
or ESTR1002 or ESTR1100 or ESTR1102"

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**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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