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THE CHINESE UNIVERSITY OF HONG KONG
Print Course Catalog Details

July 25, 2024
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 Academic Org: Dept of Computer Sci & Engg – Subject: Computer Science

Course: CSCI4180   **Course ID:** 009645   **Eff Date:** 2024-07-01   **Crse Status: Active**   **Apprv. Status:** Approved   **[Course Rev]**

Introduction to Cloud Computing and Storage 雲端計算及存儲導論

This course introduces concepts and principles of cloud computing and storage. Subjects include: cloud computing models (SaaS, PaaS, IaaS), distributed and parallel data processing (MapReduce, Hadoop, multicore technologies), virtualization technologies (hypervisor, virtual machines, full virtualization, paravirtualization), data storage (cloud storage architectures, data centers, data deduplication), security/privacy issues, and case studies of real-world cloud services (Amazon EC2, Windows Azure). This course emphasizes applied methodologies of using cloud computing and storage for solving practical engineering problems.

本科介紹雲端計算及存儲的概念和原則。內容包括：雲端計算模式（SaaS、PaaS、IaaS），分佈式和並行數據處理（MapReduce、Hadoop、多核心技術），虛擬化技術（hypervisor、虛擬機、完全虛擬化、半虛擬化），數據存儲（雲端存儲架構、數據中心、重複數據刪除），安全/隱私問題和現實世界中雲端服務的案例研究（Amazon EC2、Windows Azure）。本科著重利用雲端計算及存儲的應用方法以解決實際工程問題。

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.

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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:

Students will be able to:
1. understand the concepts and principles of the design of cloud computing;
2. understand the applied methodologies and hands-on experience of solving practical engineering problems using cloud computing.

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Course Syllabus:

This course introduces concepts and principles of cloud computing and storage. Subjects include: cloud computing models (SaaS, PaaS, IaaS), distributed and parallel data processing (MapReduce, Hadoop, multicore technologies), virtualization technologies (hypervisor, virtual machines, full virtualization, paravirtualization), data storage (cloud storage architectures, data centers, data deduplication), security/privacy issues, and case studies of real-world cloud services (Amazon EC2, Windows Azure). This course emphasizes applied methodologies of using cloud computing and storage for solving practical engineering problems.

Assessment Type:

Essay test or exam	: 30%
Others	: 40%
Presentation	: 30%

Feedback for Evaluation:

1. Course evaluation
2. Qualitative feedback from students

Required Readings:

There is no required textbook for this course.

Recommended Readings:

OFFERINGS

1. CSCI4180   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. CSCI4180   **Enrollment Requirement Group:**
         Co-requisite: CSCI3150 or ESTR3102.
         Not for students who have taken ESTR4106.

         New Enrollment Requirement(s):
         Pre-requisite = delete CSCI3150 or ESTR3102
         Co-requisite = Add CSCI3150 or ESTR3102
         Exclusion = no change

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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)   50%-74%
University theme/ priority   Innovation and Design

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