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THE CHINESE UNIVERSITY OF HONG KONG
Print Course Catalog Details

May 10, 2023
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 Academic Org: Dept of Computer Sci & Engg – Subject: Computer Science

Course: CSCI3130   **Course ID:** 002585   **Eff Date:** 2023-07-01   **Crse Status: Active**   **Apprv. Status:** Approved   【Course Rev】

Formal Languages and Automata Theory 形式語言及自動機理論

This course introduces Deterministic and nondeterminisitic finite automata, regular expressions, context-free grammars, pushdown automata, context-sensitive grammars, parsing of LR(O) and LR(K) languages, Turing machines and computability.

本科介紹確定及不確定的有限自動機、正規表達式、上下文無關文法、下推自動機、上下文有關文法、LR（O）及 LR（K）的分析、圖靈（計算）機及可計算性。

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.

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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:

understand the concepts and applications of:
1. regular languages and finite automata;
2. context free languages and pushdown automata;
3. context sensitive languages;
4. LR(k) parsing;
5. Turing machines;
6. undecidability

Course Syllabus:

This course introduces Deterministic and nondeterminisitic finite automata, regular expressions, context-free grammars, pushdown automata, context-sensitive grammars, parsing of LR(O) and LR(K) languages, Turing machines and computability.

Assessment Type:

Essay test or exam	: 40%
Others	: 35%
Short answer test or exam	: 25%

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Feedback for Evaluation:

1. interactions with students in classes;
2. course evaluations;

Required Readings:

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Recommended Readings:

Introduction Automata Theory, Languages and Computation, 3rd edition. John E. Hopcroft, Rajeev Motwani and Jeffrey D. Ullman. Addison Wesley.

OFFERINGS

1. CSCI3130   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. CSCI3130   **Enrollment Requirement Group:**
       Pre-requisite: CSCI2110 or ENGG2440 or ESTR2004 or MIEG2440.

       New Enrollment Requirement(s):
       Pre-requisite = change to "CSCI2110 or ENGG2440 or ESTR2004 or MIEG2440"

CAF

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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