This course aims at establishing the principles, techniques and tools in the design and development of computer game software with focus on the real time performance consideration. Topics include: stages in computer game development, concept of game engine, rendering considerations, physics effects, artificial intelligence (AI), audio effects, scripting and environment for game project development.

本科旨在探討電腦遊戲軟件及相關工具開發的原理及技術，並集中討論實時考慮。課題包括：開發的各個階段，遊戲引擎概念，繪圖考慮，物理效應，人工智能，聲效，劇本監控 / 編導程序及遊戲方案設計。

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.

有关等級說明的資料，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. able to implement simple walkthrough programs
2. able to write simple shader program for GPU
3. able to use a game engine to build a complete computer game software
4. able to incorporate various game design principles in the final product

Course Syllabus:
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Assessment Type:
Essay test or exam : 40%
Others : 60%
Feedback for Evaluation:
1. Course evaluation questionnaire
2. Results of game demo building projects
3. Results of the examinations

Required Readings:

Recommended Readings:

OFFERINGS
1. CSCI4120
   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. CSCI4120
   Enrollment Requirement Group:
   1. Prerequisite: CSCI2100 or 2520 or ESTR2102;
   2. Prerequisite/Corequisite: CSCI3260 or 3550.

   New Enrollment Requirement(s):
   Pre-requisite = no change
   Co-requisite = no change

CAF
   eLearning hrs for blended cls  0
   No. of micro-modules  0
   Research components (UG)  50%-74%