Advanced Computer Graphics and Visualization 高級計算機圖形學及可視化

This course provides in-depth treatment of the following advanced computer graphics and visualization topics: radiosity rendering and global illumination, procedure texturing and modeling, image-based rendering, stereo imaging, real-time volume graphics and interactive visualization.

Advisory: Students are expected to have taken CSCI3260 or its equivalent.

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.

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.

有关等級說明的資料，請參閱英文版本。
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.

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.

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.

Equivalent Offering:  
Units: 3 (Min) / 3 (Max) / 3 (Acad Progress) 
Grading Basis: Graded 
Repeat for Credit: N 
Multiple Enroll: N 
Course Attributes: MSc Computer Science MPhil-PhD Computer Sci & Erg 

Topics:
Learning Outcomes:
At the end of this course, students will have acquired the ability to
1. design, implement and evaluate customized graphics and visualization applications.
2. process and analyze data for scientific visualization applications.
3. carry out research in global illumination, image-based rendering and modeling.
4. carry out research in GPU-based volume visualization and large data visualization.

Course Syllabus:
This course provide in-depth treatment of the following advanced computer graphics and visualization topics: radiosity rendering and global illumination, procedure texturing and modeling, image-based rendering, stereo imaging, real-time volume graphics and interactive visualization.

Assessment Type:
Others: 100%

Feedback for Evaluation:
1. Course evaluation and questionnaire
2. Reflection of teachers
3. Question-and-answer sessions during class
4. Student consultation during office hours or online

Required Readings:
To be provided by course teacher.

Recommended Readings:
ENROLMENT REQUIREMENTS

1. CSCI5210

   Enrollment Requirement Group:
   For students in MSc Computer Science; or
   For students in MPhil-PhD Computer Science & Engineering; or
   For students in UG Computer Science; or
   For students in UG Computer Engineering

Additional Information

- VTL-Onsite face-to-face hrs: 0
- VTL-Online synch. hrs: 0
- VTL-Online asynch. hrs: 0

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