

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

Course: CSCI3260 **Course ID:** 002596 **Eff Date:** 2022-07-01 **Crse Status:** Active **Apprv. Status:** Approved **【Course Rev】**
Principles of Computer Graphics 計算機圖形學之原理

This course introduces fundamental computer graphics techniques and algorithms. Topics to be covered include: graphics hardware and interaction devices, transformation of coordination systems, scan conversion algorithms, hidden surface algorithms, illumination models and shading, rendering, texture mapping, computer animation and visualization.

本科介紹電腦圖形學技術之基本原理及演算法，包括坐標系統之變換、掃描變換演算法、隱藏面算法、光照模型及基本描影、渲染、紋理影射、動畫及視覺化技術。

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 understand fundamental graphics concepts and techniques;
2. Be able to transform, represent and display 2D/3D information on computer display;
3. Be able to perform interactive graphics programming in OpenGL;
4. Be able to produce a short animation sequence;

Course Syllabus:

This course introduces fundamental computer graphics techniques and algorithms. Topics to be covered include: graphics hardware and interaction devices, transformation of coordination systems, scan conversion algorithms, hidden surface algorithms, illumination models and shading, rendering, texture mapping, computer animation and visualization.

Assessment Type:

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

Feedback for Evaluation:

1. Mid-term course evaluation
2. Term-end course evaluation
3. Quality of project outcome
4. Students' performance in the midterm exam and final exam

Required Readings:

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Recommended Readings:

1. Computer Graphics with OpenGL (Third Edition), Donald Hearn & M. Pauline Baker, Pearson Prentice Hall

OFFERINGS

1. CSCI3260 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. CSCI3260 **Enrollment Requirement Group:**
Prerequisite: CSCI2100 or 2520 or ESTR2102.

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

CAF

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

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