COURSE DETAIL

COMPUTER GRAPHICS: GEOMETRY AND SIMULATION

Country
United Kingdom - Scotland

Host Institution
University of Edinburgh

Program(s)
University of Edinburgh

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Computer Science

UCEAP Course Number
172

UCEAP Course Suffix

UCEAP Official Title
COMPUTER GRAPHICS: GEOMETRY AND SIMULATION

UCEAP Transcript Title
GRPHCS: GEOMTRY&SIM

UCEAP Quarter Units
4.00

UCEAP Semester Units
2.70

Course Description

This course introduces classic and state-of-the-art methodology in computer graphics. We will focus on methods and best practices in geometry and physical simulation, which are the basic building blocks for downstream applications such as animation, industrial design, game engineering, structural analysis, AR/VR, and medical imaging. Our curriculum will cover basic representations of shapes, geometric optimization, analysis, and principles of robust digital simulation of physical scenes. The techniques employed will involve classical numerical analysis up to deep geometric learning.

The course will include programming tasks to implement a few key algorithms in geometry processing, geometric learning, and physical simulation, to the extent that they can independently run and be analysed on modest open-source data.

This course (CGGS) and Computer Graphics: Rendering (CGR) are both courses that require no previous knowledge of computer graphics. These two courses may be taken independently or together. CGGS focusses on the representation, processing, and dynamics of 3D objects in the virtual world while CGR focusses on the rendering of virtual worlds as photo-realistic images.

Language(s) of Instruction
English

Host Institution Course Number
INFR11241

Host Institution Course Title
COMPUTER GRAPHICS: GEOMETRY AND SIMULATION

Host Institution Course Details
http://www.drps.ed.ac.uk/23-24/dpt/cxinfr11241.htm

Host Institution Campus

Host Institution Faculty
School of Informatics

Host Institution Degree

Host Institution Department

Course Last Reviewed
2023-2024

Print