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 Campus

Host Institution Faculty
School of Informatics

Host Institution Degree
Host Institution Department

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