COURSE DETAIL

THREE DIMENSIONAL MODELING
Country Netherlands
Host Institution Utrecht University
Program(s) Utrecht University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Computer Science
UCEAP Course Number 112
UCEAP Course Suffix
UCEAP Official Title THREE DIMENSIONAL MODELING
UCEAP Transcript Title 3D MODELING
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description
3D Modeling pertains to all forms of creating, designing, synthesizing, acquiring, analyzing, and deforming geometric shapes in space. The applications are numerous: from computer graphics and the film industry, through computer-aided design (CAD/CAM) and architecture, to processing of point clouds and procedural modeling. The exercise is performed on the Blender open-source 3D-modeling environment. The following topics are covered: interpolating polynomials, Bezier curves, B-splines implicit surfaces, marching cubes subdivision and mesh representation structures polygonal meshes, mesh compression, hierarchy Delaunay triangulation, tetrahedralization, alpha-shapes LiDAR point clouds, RANSAC, reconstruction, CityGML normal estimation, principal component analysis progressive meshes procedural modeling, L-systems. Prerequisites for this course include a course on computer graphics, algorithms, and programming. The knowledge of linear algebra and basic calculus is very helpful for this course, but not entirely necessary; some of the basics are covered in the context.

Language(s) of Instruction
English

Host Institution Course Number
INFODDM

Host Institution Course Title
THREE DIMENSIONAL MODELING

Host Institution Course Details

Host Institution Campus
Science

Host Institution Faculty

Host Institution Degree

Host Institution Department
Information and Computing Sciences

Course Last Reviewed

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