Geometric Modeling (4190.667)

Fall, 2019

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Course URL: http://3map.snu.ac.kr

Classroom: 302–106
Time: Tue, Thur 11:00–12:15

1. Course Description:
   This course covers basic algorithms and systems that deal with three-dimensional modeling and processing in computer graphics, animation, and games. In particular, special emphasis will be given on the following topics:

   - Geometric modeling of freeform objects;

   - Geometric constraints for freeform objects;

   - Efficient algorithms for freeform geometric models.

2. Prerequisites:
   Computer Graphics (4190.410)

3. Grade:

   - Midterm: 100 pts

   - Final: 100 pts

   - Homeworks, Quizzes & Projects: 100 pts

4. Textbook:

   - Gerald Farin and Dianne Hansford, *The Essentials of CAGD*, AK Peters, 2000.

   - Related Research Papers and Lecture Notes, etc.

Weeks	Lectures	Projects
9/2–7	Bézier Curves	
9/9–11	Bézier Surfaces	
9/16–21	Polynomial Surfaces	
9/23–28	Composite Curves	
9/30–10/5	B-spline Curves	
10/7–12	Composite Surfaces	
10/14–19	NURBS	
10/21–26	**Midterm Exam**	
10/28–11/2	Curve/Curve Intersection	
11/4–9	Surface/Surface Intersection	
11/11–16	Surface/Surface Intersection	
11/18–23	Collision Detection	
11/25–30	Distance Computation	
12/2–7	Geometric Processing	
12/9–14	Geometric Processing	
12/16–20	**Final Exam**	