

Geometric Modeling (4541.667)

Spring, 2012

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

Classroom: 302-209

Time: Mon, Wed 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
9/3–7	Bézier Curves	
9/10–14	Bézier Surfaces	
9/17–21	Polynomial Surfaces	
9/24–28	Composite Curves	
10/1–5	B-spline Curves	
10/8–12	B-spline Curves	
10/15–19	Composite Surfaces	
10/22–26	NURBS	
10/29–11/2	Midterm Exam	
11/5–9	Curve/Curve Intersection	
11/12–16	Surface/Surface Intersection	
11/19–23	Collision Detection	
11/26–30	Distance Computation	
12/3–7	Geometric Computations	
12/10–14	Final Exam	