

Geometric Modeling (4190.667)

Fall, 2017

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

Classroom: 302-106

Time: Mon, Wed 17:00–18:15

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
9/4–9	Bézier Curves	
9/11–16	Bézier Surfaces	
9/18–23	Polynomial Surfaces	
9/25–30	Composite Curves	
10/2–7	B-spline Curves	
10/9–14	Composite Surfaces	
10/16–21	NURBS	
10/23–28	Midterm Exam	
10/30–11/4	Curve/Curve Intersection	
11/6–11	Surface/Surface Intersection	
11/13–18	Surface/Surface Intersection	
11/20–25	Collision Detection	
11/27–12/2	Distance Computation	
12/4–9	Geometric Processing	
12/11–16	Geometric Processing	
12/18–21	Final Exam	