

Fall 2007

# CEG 777: Computer Aided Geometric Design

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# CEG-777 Computer Aided Geometric Design

Fall 2007

Class Hours: 12:20 - 1:35 PM, Tu., Th., Classroom: 406 RC, Instructor: A. Goshtasby,  
Office: 495 Joshi Center, E-mail: [agoshtas@wright.edu](mailto:agoshtas@wright.edu), Phone: 775-5170  
Office Hours: 2:00 - 4:00 PM T, R; or by appointment.

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CRN: 89053

Units: 4

**Textbooks:**

*Geometric Modeling, 3rd Edition*

Michael E. Mortenson

Industrial Press, Inc., 2006

**Purpose of Course:**

To cover the fundamentals of geometric modeling, including design of curves and surfaces, composite curves and surfaces, and subdivision techniques for creation of free-form shapes.

**Contents:**

1. Mathematical preliminaries
2. Cubic Hermite curves
3. Bézier curves
4. B-spline curves
5. Rational Gaussian curves
6. Properties of curves
7. Bicubic Hermite surfaces
8. Bézier surfaces
9. B-spline surfaces
10. Rational Gaussian surfaces
11. Subdivision surfaces
12. Implicit surfaces

**Learning Goals:**

Students will learn the basic mathematical tools to design geometric models and implement some of the tools.

**Projects:**

There will be four projects and four quizzes. Each project will require about 15 hours of work, and each quiz will cover two weeks of materials covered in class.

**Grading Policy:**

Programming assignments will worth 50% the quizzes will worth 50% of the overall grade. Following grades are guaranteed A: 90..100, B: 80..89, C:70..79, D: 60..69, E: 0..59.

**Calendar:**

**Quizzes:** On 9/27, 10/11, 10/25, 11/8

<b>Projects</b>	<b>Assigned dates</b>	<b>Due dates</b>
Project 1	9/20	10/2, 12:00 PM
Project 2	10/4	10/16, 12:00 PM
Project 3	10/18	10/30, 12:00 PM
Project 4	11/1	11/15, 12:00 PM