**COURSE DESCRIPTION**

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| **Dept., Number** | **CS480-CS680** | **Course Title** | **Computer graphics** |
| **Semester Hours** | **3** | **Course Instructor** | **Dr. E. A. Yfantis** |
| **Office-Hours** | **M.W. 4:00-5:00** | **Preparation Date** | **Fall 2016** |

1. **Current Catalog Descritpion**

Graphics hardware, software and applications. Data structures for graphics, graphics languages, computer-aided design, and three-dimensional graphics. Prerequisites CS302, and Math 365.  
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1. **Textbook:**

Computer Graphics, Third Edition, J. F. Hughes, A. Van Dam, M. MCGuire, D. Sklar, J. Foley, S. Feiner, K. Akeley. Published by Addison Wesley, 2014

1. **Tests, Homework and Grading**

Approximately 13-Programming Homeworks will be assigned throughout the semester, worth a total of 60 points. Two tests will be given worth 50 points. Students with 90-110 points will be given an A, with 70-90 a B, 60-70 a C, 50-60 a D, less than 50 an F.

1. **Major Topics Covered in the Course**

* Color Systems, RGB for progressive video, YIQ, YUV, YCrCb, HSV, CMYK for Printing, and YRG for painting.
* Fractals and Pixel plotting exercises. Serpinski Gasket, Julia Sets, the Mandelbrot Set.
* 2-D graphics and 2-D transformations.
* Animation Use of double buffering.
* 3-D graphics. Parallel projections, perspective projections.
* 3-D Transformations and 3-D Geometry.
* Hidden surface elimination.
* Gouraud shading, and Fong shading.
* Texture Mapping.
* Morphing and Masking.
* Ray tracing.
* Lights and the Light-Camera-Shading Model.
* Hiden line elimination.
* Bezier curves and surfaces.
* Hermite polynomials and natural splines for interpolation.
* B-Splines for curves and surfaces.
* NURBS.
* Adding audio to the computer graphics and computer games.
* Radiosity.
* Voice Interactive Games.

**HOMEWORK 1 (Due Sept. 7, 2016)**

**Write a program in C# to graph the Julia sets. The input to your program should be the constants C0, C1.**