

Spring 2012

# CEG 498-01: Team Projects I and II

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Welcome to  
**CEG481/CEG681 - Scientific Visualization and  
 Virtual Environments**



Instructor: Dr. Thomas Wischgoll  
[thomas.wischgoll@wright.edu](mailto:thomas.wischgoll@wright.edu)  
 485 Joshi Research Center  
 937-775-5057

Office Hours: Mon/Wed 05:00pm - 06:00pm  
 (or by appointment)

Textbook: Data Visualization - Principles and Practice  
 Alexandru C. Telea  
 A.K. Peters, 2008, ISBN 978-1-56881-306-6

Webpage: <http://avida.cs.wright.edu/courses/CEG481/>

Lecture: Mon 06:05 pm - 07:20 pm  
 Wed 06:05 pm - 07:20 pm  
 (Russ 150)

Exams: Midterm: Wed, May 2nd, 6:05 pm (in class)  
 Final project: due Wed, June 6th, 11:59 pm

Grading Policy: 30% (assignments) + 30% (midterm) + 40% (final project)= 100%

Each class is different. Therefore, no absolute grading scheme can be defined in advance. However, the following guarantees will always be made:

90%	80%	70%	60%	50%
A	B	C	D	F

## Course Goals/Objectives

By the end of this quarter, you will be familiar with techniques used for visualizing various types of data sets, such as medical, vector or general data sets. This includes appropriate visualization methods for geometric, volumetric, and higher dimensional data sets (e.g. vector or tensor data). In addition, you will learn about user modalities, including different input devices and display types for more advanced visualizations.

The outline of the course is as follows:

- Introduction
- From Graphics to Visualization (chapter 2)
- Data Representations (chapter 3)
- The Visualization Pipeline (chapter 4)
- Scalar Visualization (chapter 5)
- Vector Visualization (chapter 6)
- Tensor Visualization (chapter 7)
- Volume Visualization (chapter 10)
- Information Visualization (chapter 11)

## Prerequisites

- CEG476 or MTH476

If you are unsure about any of these requirements, come talk to me.

## Course Format

The course consists of two lectures a week. Attendance of the lectures is not strictly mandatory. However, you are responsible for all materials, announcements, assignments, *etc.* covered in either the lecture or assignments. If you miss a class, consult a classmate for any missed materials.

The purpose of the class is for everyone to understand the issues involved with visualization. To this end, if you don't understand something during class,

please ask. If you are confused, it is likely that a few of your classmates are as well. Also, listen to others' questions. Many times you'll think you understand a concept until you hear someone else's question about it. Dialogue is the best way to learn things, so don't be afraid to speak up. I will not specifically assign reading assignments. However, it is advisable to read along in the text book as we advance in the class.

There will be three assignments to be returned on the specified date, one in class midterm, and one final project. Students taking this course at the 600-level are required to incorporate lighting based on the Phong illumination model in the volume renderer for the final project. The grade will be determined as stated earlier.

## Assignments

Three assignments will be given which are due on the following dates:

Assignment 1: due: Wed, April 15th, 11:59 pm  
Assignment 2: due: Wed, April 29th, 11:59 pm  
Assignment 3: due: Wed, May 20th, 11:59 pm

For implementing the assignments, you can use the PCs in room 315 RC. You can also use any other computer that is available to you. However, you need to be able to demonstrate your software on one of the computers within Russ Engineering Center in 315 RC. You are welcome to exchange top-level ideas with your peers. However, it is not appropriate to exchange code or base your solution to a significant amount on code you found online. On the day the assignment is due, please turn in a screenshot of your software and your source code, including makefiles or project files, packed as a zip or tar file via WebCT. We will have interactive grading sessions where you can demonstrate your final software after the due date

## Office Hours

Office hours are as listed above **or by appointment**. If you are unable to come to the posted office hours, contact me and we can arrange to meet. There is no reason why anyone should be unable to see me if they need to.

## Other Resources

The class web page is maintained at <http://avida.cs.wright.edu/courses/CEG481/>. It will keep information, assignments, announcements, etc. There is also a class mailing list. Make sure your email address is registered with the registration system. Please check the web page and read your email. I will try to make any announcements in both places as well as in class, but you don't want to miss anything.

## Class Policy

- Assignments will not be accepted late unless approved by the instructor.
- The solution for the assignment has to be turned in as executable and source code to receive full credit. The solution has to work on one of the computers in the Russ Engineering Center receive full credit.
- During the midterm, after completing the test, each student must sign his test solution in with the instructor.

## Fine Print

**Exams** Exams will emphasize insight and problem solving ability rather than memorization. Exams will be closed notes, closed book, and no laptops or calculators.

**Missed Exams** Makeup exams will only be given for the gravest of reasons. If you must miss an exam due to extreme illness, *etc.*, contact the instructor (email is fine) or leave a message with the Department of Computer Science and Engineering office (937-775-5131) *before* the exam. Be sure to leave both the reasons for missing the exam and how to reach you.

**Add/drop Policy** A copy of the add/drop policy is available at the main office or [online](#).

**Cheating** Please do not. I am not obsessed with looking for cheating, but if I see something suspicious, I will refer it to the Office of Judicial Affairs. This is more work for me, and is embarrassing for everyone. Again, please don't; this has been a problem in the past. If the rules are unclear or you are unsure of how they apply, ask the instructor *beforehand*. The academic integrity policy as available [online](#).

**Feedback** If you like, dislike, or don't understand something I'm doing with the course, please stop by my office hours, send me email, or paste together a note from newspaper clippings and drop it in my mailbox. I won't always change things, but I will always explain why I'm doing them the way I am.

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