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Ω    COMP 401                      Senior Seminar                      Ω

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*M-W                      Seminar/Lecture – 12:30-1:50*

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Who: Michael Gousie  
Where: Science Center 102  
When: Mon 2:00-3:00; Tue 2:00-4:00; Fri 11:30-12:00  
and by appointment  
E-mail: mgousie@wheatoncollege.edu  
Web: <http://cs.wheatoncollege.edu/mgousie/comp401.html>

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**Recommended Texts:**

If you're new to Flash, there are plenty of books (and Web sites) to choose from, among them:

Bhargal, S. and Besley, K. *Foundation Flash 8*. Friends of ED, 2006

or

Vander Veer, E. A. *Flash CS3: The Missing Manual*. Pogue Press, 2007.

Intermediate Flash:

Yard, Webster, and McSharry. *Foundation ActionScript 3.0 with Flash CS3 and Flex*. Friends of ED, 2007.

**Course References:**

We will look at excerpts from the following sources:

E. Tufte, *The Visual Display of Quantitative Information* (Graphics Press, 1983) [on reserve]

E. Tufte, *Envisioning Information* (Graphics Press, 1990) [on reserve]

E. Tufte, *Visual Explanations* (Graphics Press, 1997) [on reserve]

E. Tufte, *The Cognitive Style of PowerPoint* (Graphics Press, 2003) [on reserve]

E. Tufte, *Beautiful Evidence* (Graphics Press, 2006) [library?]

C. Ware, *Information Visualization*, 2nd Edition (Morgan Kaufmann, 2004)

S. McConnell, *Rapid Development* (Microsoft Press<sup>1</sup>, 1996)

Various Software Engineering texts and visualization articles

**Course Content**

**Seminar** \Sem'ɪ'nar\", n. [G. See Seminary, n.]

A group of students engaged, under the guidance of an instructor, in original research in a particular line of study, and in the exposition of the results by theses, lectures, etc.; – formerly called also seminary, now seldom used in this sense.

Much of this course will follow the definition of a seminar, under the topic of visualizing information. You will work on a research project in a team. The project involves a quantitative visualization that you will implement as a Flash application. The project will be defined by an imaginary outside “client.” Your team will work with us on the details of the visualization and then “pitch” your prototype to us and possibly several guest “managers.” After gathering responses to your ideas, you will implement the system and present the finished product at the end of the semester. Along the way, we will look at and practice some software engineering principles, consider various visualization systems, and discuss visualization research papers.

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<sup>1</sup>Yes! Microsoft!

**Grading:**

There will be various types of assignments in this course. You will write three Flash movies/applications dealing with visualization problems, the last of which is a large group project. As part of the project, the group will write multiple versions of a Detailed Functional Specification (DFS). The group will do a formal presentation of its final project in front of the client and the general public. Each student is responsible for three individual, short, in-class presentations, in which the complexities of a research paper are disseminated. You are expected to contribute to all in-class discussions. The breakdown of points follows; note that there are times when assignments overlap.

What	Weight	Due Date
Flash 1	6%	February 15
Detailed Functional Specification (DFS) v1.0	5%	March 1
Marketing presentation	15%	March 3
DFS v2.0	5%	March 8
Flash 2	10%	March 12
Short presentation 1	5%	March 24
Short presentation 2	7%	April 7
Short presentation 3	7%	April 28
Final client presentation/Flash 3	30%	May 5
In-class participation, miscellaneous	10%	

Grades will be assigned according to the following scale:

A = 93-100, A- = 90-92, B+ = 87-89, B = 83-86, B- = 80-82, etc.
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**Course Policies:**

- You are responsible for all material covered in class.
- You are responsible for all reading assignments as assigned/handed out in class.
- The programming projects are in Flash, and thus development will be done on Windows computers that have the software. Your projects must be emailed and/or uploaded to the server by the due date.
- All reports and papers must be done on a word processor or using  $\text{\LaTeX}$ , as well as checked for spelling and grammar.
- Assignment due dates are FIRM.
  - All programming projects must be submitted electronically by 11:59:59 PM on the due date unless otherwise noted. Projects submitted on the following day will receive a 15% penalty. Anything turned in later will receive a 0. Hard copy must be submitted at the beginning of class on the next day.
  - Written homeworks/papers must be submitted at the beginning of class on the due date. There is no provision for late homeworks.
- You are expected to adhere to the Honor Code.
  - Although *discussion* of assignments is encouraged, the *implementation* of programs is to be the result of your, or your group's, own work. Any copying of programs or portions of programs that is not fully documented and discussed as such will result in a 0 for that assignment or failure of the course.
  - Written homework/papers should absolutely be your own work. Copying of homeworks will result in a 0 for the homework portion of the grade or failure of the course.
- The use of cell phones, iPods, and other personal electronic devices is prohibited during class and exams.

**Detailed Course Schedule** (Subject to change):

Date	Topic	Reading	Due
Jan 27	Introduction; what are we doing?		
Feb 1 3	Basic Flash More Flash	Flash text Handouts, Web links	Résumé, cover letter
8 10	Client meeting XML, ActionScript	Flash text, handouts	Open mind
15 17	Introduction to visualization systems Visualization examples	PowerPoint <small>yikes!</small> ; Web links	Flash 1
22 24	Software engineering I; functional specifications Project discussion	Handouts	
Mar 1 3	The power of PowerPoint? Project proposal presentation for client	<i>The Cognitive Style of PowerPoint</i>	DFS v1.0 Marketing pitch
8 10	Project discussion, Tufte Tufte does rocket science	<i>The Visual Display of Quant. Info.</i> Web link, <i>Visual Explanations</i>	DFS v2.0 Flash 2 (Friday)
15 17	SPRING BREAK SPRING BREAK	Islands Guidebook	Corona bottle
22 24	How to read a research paper I  Tufte class discussions	<i>Visualizing Crowds at a Web Site</i> <i>CompSurf: An Environment for ...</i> <i>A (sic) Empirical Study of Web- ...</i> <i>Envisioning Information,</i> <i>Beautiful Evidence</i>	Short presentation
29 31	How to read a research paper II  Project progress meeting	<i>Continuous Parallel Coordinates</i> <i>Scattering Points in Parallel ...</i>	Mockup
Apr 5 7	Software engineering II Visualization paper presentations I	<i>Rapid Development</i> Your choice	Copy of article Short presentation
12 14	Project progress meeting; client review? Software engineering III	<i>Rapid Development</i>	
19 21	Visualization topics I Visualization topics II	<i>Information Visualization</i> <i>Information Visualization</i>	
26 28	TBD Visualization paper presentations II	TBD	Copy of article Short presentation
May 3 5	Project finalization Final presentation		Flash 3