



**4002-536**  
**Web Client Side Programming**  
**Fall 20041 Course Syllabus**

The information presented in this syllabus is subject to expansion, change, or adjustment during the quarter.

**Instructor:**

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**Office Hours:**

Monday 4-6pm  
Wednesday 2-4pm  
**and by appointment**

**Course Web Page:**

<http://www.rit.edu/~dsbics/536/536-041.shtml>

**FirstClass Conference:** 536-Bogaard-041

**Course Text and Materials**

- Required text: **JavaScript: The Definitive Guide, 4<sup>th</sup> ed.** Flanagan, O'Reilly & Associates, ISBN: 0596000480
- Required text: **Flash MX 2004 Actionscript Bible.** Reinhardt, Wiley, ISBN: 0764543547 (Available on Books 24x7.)
- Recommended text: **Visual Quickstart Guide: Macromedia Flash MX 2004.** Ulrich, Peachpit Press, ISBN: 0201794810
- Additional readings will be provided as handouts or web URLs.

**Important RIT Deadlines**

Last day of add/drop is **Monday, September 13, 2004.**

Last day to withdraw with a grade of "W" is **Friday, October 15, 2004.** The deadline for withdrawing from a course with a W grade is the end of the 6<sup>th</sup> week of the quarter. Forms may be obtained from your department office and need your instructor's signature. The completed forms should be returned no later than October 15, 2004.

**NOTE:** IT department policy states that a student has one quarter to **challenge** any **grade**. After that, grades cannot be challenged.

**Course Description**

This course will explore the possibilities and purpose of client side scripting over the Internet. Students will learn to use both native and plug-in technologies to build interactive interfaces that are both usable and effective. Key features that will be addressed are browser compatibility, object reusability (bandwidth issues), and different scripting environments. Programming is required.

**Prerequisite Courses**

4002-330, 4002-409 and 4002-218 or equivalent.

## **Course Goals and Objectives**

### **General Course Goals**

To instruct students to the issues involved in client side web scripting, including browser manipulation, deployment on multiple browsers and platforms, and the use of specific plug-in technologies where appropriate. The course will focus in the implementation of usable, effective web interfaces that are developed using client-based technologies.

### **Specific Objectives (Learning Outcomes)**

By the end of the course, students should be able to:

- 1.1 Students will create scripts that execute on multiple browsers/platforms such as Mozilla and Internet Explorer on both the PC and Macintosh environments in individual projects.
- 1.2 Students will use client side technologies to manipulate the document object model (DOM) to create interactivity and navigation, dynamically build page elements, and communicate with plug-in technologies in individual projects.
- 1.3 Students will write scripts in technologies such as JavaScript, DHTML, CSS, SVG, SMIL, and proprietary scripting languages to gain familiarity with current practices and future developments in web client side scripting. This will be assessed in in-class activities.
- 1.4 Students will demonstrate the use of vendor specific technologies to overcome the limitations of general purpose scripting languages in individual projects.
- 1.5 Students will demonstrate basic proficiency by completing a practical hands-on examination to create any of the following:
  - 1.5.1 Interactive and/or dynamic web pages (that could utilize JavaScript, CSS, DHTML, SVG, SMIL, or other current client side technology)
  - 1.5.2 Browser viewable application built upon plug-in technology

### **Prerequisite Skills**

1. Design and construct a medium-scale static web site
2. Write computer programs incorporating:
  - 2.1. Local and global variables used following generally accepted programming practices
  - 2.2. Control Structures such as if, if-then-else, counted and conditional loops and nested control structures.
  - 2.3. Good coding style such as commenting code, indenting code to show structure and choice of meaningful names.
  - 2.4. Functions and/or Objects and Methods (OOP).

### **Role of this course in the Information Technology curriculum**

This course is required for graduation in BS/IT, and contributes to the following program outcomes:

- Program effectively within the student's specialty area.
- Design and implement a website using appropriate media to meet the needs of the user.

- Use multiple computer hardware platforms

## **Course Organization**

### **Projects**

We will have three major projects during the quarter. These projects will build upon concepts covered in the class and in exercises, and are your opportunity to expand your understanding and apply creativity to the concepts learned.

Multimedia projects tend to be time-consuming, so plan to **get started early!**

### **Exams & Practicums**

A final practicum will be given in which you may demonstrate your mastery of the course material. For this practical exam, you will be given tasks to accomplish on the computer. The practical exam is not designed to be extremely difficult, but it will demonstrate your mastery of the course material. No make-up practicum will be given.

### **FirstClass**

You are required to have a FirstClass account for course communications and for submission of those assignments that must be submitted as files to our FirstClass drop box. Please note that you can install a FirstClass client on your own PC that requires an Internet connection. Alternately, you can connect to the system in a web browser. The URL is **[firstclass.it.rit.edu/login](http://firstclass.it.rit.edu/login)**

## **Course Topics**

- Client Web Scripting (JavaScript)
  - Review of the DOM
  - Browser Comparisons (and accessibility)
  - Strategies for multiple deployment
  - Cookies
  - Animation
  - Text File Parsing
  - Dynamic Menus
  - Repositioning Elements for Browser Correction
- Specific Plug-in Technologies (currently Flash)
  - Custom Technologies and Appropriate Usage
  - Vector Graphics
  - Learning the application interface
  - Similarities of JavaScript/ActionScript
  - Animation (and comparison with JavaScript solutions)
  - Creating Forms
  - Parsing Forms
  - Reusability
  - Streaming content
- Future Technologies
  - SVG
  - SMIL

## Grading

Your grade will be based on your individual assignments & a final practical.

It's important to understand that if you complete all the requirements for an assignment, that entitles you to a grade of "B" (i.e. "satisfactory work"). To receive an A for an assignment, you must go *beyond* the basic requirements, and demonstrate creativity, initiative, and excellence--the grade of A is intended for work that is superior, rather than average.

Assignments submitted after the due date/time, without prior approval from me, will lose one full letter grade for each day that they are late. If you know that a situation will prevent you from turning something in, contact me in advance of the deadline to make alternate arrangements.

The grading scale used along with the grading criteria is as follows:

<b>Component</b>	<b>Weight</b>
Project 1: Interactive Form Elements	30
Project 2: Personal SVG Page	20
Project 3: E-Commerce Site	30
Practicum	20

<b>Range</b>	<b>Grade</b>
$\geq 90.0\%$	A
$\geq 80.0\% \ \& \ < 90\%$	B
$\geq 70.0\% \ \& \ < 80.0\%$	C
$\geq 60.0\% \ \& \ < 70.0\%$	D
$< 60.0\%$	F

## Course Schedule

Week	Topics	Activities	Readings
1	JavaScript Basics Arrays & Functions		JS: Ch 1-7, 9
2	Window & Cookies Document & Forms		JS: Ch 12-16
3	DOM DHTML & Event Model		JS: Ch 17-19
4	DHTML (Menus) SVG - primitives	Project 1 due (end of week)	Online readings (check course page)
5	SVG – SMIL SVG – JavaScript		Online readings (check course page)
6	Flash – interface Symbols	Project 2 due (end of week)	VQS: familiarize with whole book
7	ActionScript Programming -basics		AS:TDB (depends how fast we move)
8	ActionScript Programming - media control -timeline manipulation		AS:TDB (depends how fast we move)
9	ActionScript Programming -dynamic creation -external data		AS:TDB (depends how fast we move)
10	Programmatic control of 3D attributes Interactivity in three dimensions Mouse and keyboard control	PRACTICUM Project 3 due (finals exam time)	

**Cheating:** Academic dishonesty is misrepresenting someone else's work as your own. Academic dishonesty is a serious matter, and can result in an automatic F for the course. Please review the IT department's policy on cheating, located online at <http://www.it.rit.edu/policies/dishonesty.html>.

If, during the quarter, you ever have any questions about what does or does not constitute academic dishonesty, please come and talk to me.

### Finally...

Any or all of the previous information is subject to change or adjustment during the quarter.