

Program: Web Development & Interactive Design

Term: 3

Course Outline: jQuery & AJAX

Revision: June 8, 2012

Instructor: Ali Efe

**Brief Course
Description:**

This course builds on the introduction to jQuery students received in Term 2, and is for web developers, or desktop application developers with significant experience in web technologies, who wish to develop the skills needed to apply AJAX technologies to existing web applications, or to architect and implement new applications that can benefit from the AJAX approach.

AJAX allows for development of applications that communicate with the server based on user interactions. This allows for faster load times and can significantly reduce the overhead for complex data-driven applications.

In-class exercises and assignments are designed to develop a students' skills use of jQuery and AJAX.

Course Prerequisites:

Completion of Terms 1 and 2 in the Web Development & Interactive Design Diploma Program

**Textbooks Required
for this Course:**

Instructor developed course material

**Equipment Required
for this Course:**

Provided materials:

- Adobe CS5.5 Web Premium
- Personal Computer
- Internet Access

Student supplied materials:

- None

Course Duration:

11 weeks – 1 class per week - 3 hours 20 minutes per class - 36 hours total

Homework Hours:

Average 1 - 1.5 hours per week

Delivery Methods: On-site delivery

Instructional Method:

Method	%	Total Contact
Classroom (Instructor Led)	75	Hours
Supervised Lab	25	36

Learning Objectives/Outcomes: Upon successful completion of this course the student will be able to proficiently:

- Understand the logic behind asynchronous data transfer
- Understand and use jQuery UI (User Interface)
- Use XML and jQuery to create AJAX applications
- Integrate 3rd party APIs using jQuery/AJAX and create interaction with social media sites
- Create database driven applications with AJAX such as auto-completed search (like google search) and dynamically created select boxes

Student Progress/Assessment Methods:

Evaluation of the students' work will be in strict adherence to the VanArts grading policy as outlined in the VanArts Student Info Centre

<http://www.VanArts.com/infocentre/VanArts-student-information-centre>

All assignments and projects are expected to be on time. Any late assignments will not be accepted for grading unless under exceptional circumstances as determined by instructor discretion.

Course Assessments	
Individual Skill Critiques	67%
Attendance and Professional Context	33%

Attendance Expectations:

Due to the volume of material being covered, it is important that students attend every class. Instructors will not repeat lecture material. Unexcused absences may directly affect your final mark. Please refer to the Student Info Centre

<http://www.VanArts.com/infocentre/VanArts-student-information-centre> for more information regarding our attendance policy.

Course Details:

Week 1: Review Fundamentals of JavaScript	
<i>Topics</i>	Review functions in JavaScript
	Build a calculator application
	Create simple form validation
	Use regular expressions to check form data
Week 2: Review Basics of jQuery	
<i>Topics</i>	jQuery is not a new language
	jQuery syntax and using selectors
	Basic functions: accessing and assigning element values using '.value()', '.html()', '.text()' and '.attr()' functions
	Form validation using jQuery
	Animated error messages with jQuery effects ('fadeIn()', 'fadeOut()' etc.)
Week 3: Using jQuery with JavaScript and CSS	
<i>Topics</i>	Combine jQuery and JavaScript code
	Trigger functions using jQuery
	Change element styling using jQuery: '.css()'
	Add elements to an existing page using jQuery: '.append()' and '.prepend()'
	Create a simple photo gallery using events and effects
Week 4: Creating Expandable and Accordion Menus	
<i>Topics</i>	Create an expandable menu
	Create an accordion menu
	Stop a default hyperlink event: stopPropagation()
	Load external content into a page: load(), unload()
Week 5: Introduction to AJAX	
<i>Topics</i>	How AJAX differs from classic web pages and user experience
	What kind of applications can benefit from AJAX
	Who is using AJAX and why
	Why AJAX totally changes web application development
	How AJAX can be integrated with conventional web applications
	Introduction to jQuery ajax() function
	Properties of ajax() function
	Create an AJAX application to search a database with auto-complete (like google search), with simple text results
Week 6: AJAX & jQuery	
<i>Topics</i>	Using arrays and loops with jQuery

	Create an AJAX application to search a database with auto-complete (like google search), with XML results
<i>Assignment</i>	Create an AJAX application to search data in a table, triggered by a button
Week 7: AJAX & jQuery	
<i>Topics</i>	Review and discuss material covered so far
	<p>What else can be built using AJAX?</p> <ul style="list-style-type: none"> • Related combo boxes • Type-ahead suggestions • Information pop-ups • Server-side validation • Auto-saved forms • Maps • Logins • Portals • Personalization • etc.
	Introduce a pre-built photo gallery or slideshow library: coinslider (or other updated gallery)
	Create a dynamic photo gallery by combining above library and AJAX to pull file names of pictures from a database
Week 8: AJAX & jQuery	
<i>Topics</i>	Create an instant messaging (chat room) script using AJAX and jQuery
Week 9: Interacting With Social Media Using AJAX	
<i>Topics</i>	Introduction to JSON
	How JSON can be used, and why
	Create a script to get the latest tweets from twitter with a specific keyword
Week 10: jQuery UI	
<i>Topics</i>	Introduction to jQuery UI
	Changing jQuery UI theme
	jQuery UI widgets: datepicker, button, slider, autocomplete, etc.
	jQuery UI effects: toggle
Week 11: Crop Pictures Using jQuery	
<i>Topics</i>	Introduction to jCrop library
	Cropping an image (theory)
	Information needed for image and selected area
	<p>Create an application with the following steps</p> <ul style="list-style-type: none"> • Upload an image • Select the area to crop

	<ul style="list-style-type: none">• Crop the image and save <p>(jCrop only generates coordinates of selected area, PHP must be used for image manipulation)</p>
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