NMD150: Script Your World
Syllabus v1.1, Spring 2013
John Bell ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓

Course Description

This course introduces students to methods and concepts of structured development using JavaScript. While the course is taught using scripting within a web browser, the principles described are applicable to not just using JavaScript in many different environments but to creative problem solving in general. No prior programming experience is required, but students should be familiar with HTML. (If you are not, there are tutorials available – see below.)

Course Goals

1. Learn how programmers approach problems and how their methods can be used to solve complex tasks.
2. Develop skills for conceptualizing, architecting, and implementing a program.
3. Understand how common programming principles are expressed in JavaScript.
4. Discover how to use JavaScript syntax to manipulate data, implement logic, enable interaction, and control the presentation of information.

Books

- Required: *Eloquent JavaScript: A Modern Introduction to Programming*, Marijn Haverbeke (ISBN 1593272820)

Useful Links

NMD Tutorials: http://tutorials.nmdprojects.net
Firefox: http://getfirefox.com
Firebug: http://getfirebug.com
Cyberduck: http://cyberduck.ch
Sublime Text: http://www.sublimetext.com
W3Schools HTML Tutorials: http://w3schools.com/html
Making Screencasts: http://tutorials.nmdprojects.net/make_screencast

Course Structure

The work in this class is not overly difficult because part of what the class teaches is how to break a programming project down into manageable chunks. However, while it may not be hugely difficult, the work is continuous. Each class discusses a different concept and implements that concept by incrementally adding to a project that is built up throughout the semester. All concepts are demonstrated in a hands-on lecture session, after which students will have to figure out how to apply the new idea to their work. The following class session will review the changes and introduce the next concept. There are no throwaway assignments in this class because every day you are adding to what will be presented as your final project at the end of the semester.

Attendance Policy

Attendance is critical because of the continuous accretion described above; missing a class means missing a layer of the final program and will need to be made up before moving forward. You will be allowed to miss up to two classes due to illness or emergency, provided you notify

me by email before class time. Each additional absence, or any unexcused absence, will result in the loss of a full letter grade. During inclement weather you should check the course folder on FirstClass for possible cancellations and check to see if the entire University has been closed for the afternoon.

Collaboration Policy

Collaboration is allowed in this class, within certain parameters. Most importantly, all collaborations must be documented following the procedures that will be given to you in class. In addition, while you are allowed to collaborate on many different assignments, you are only allowed to collaborate with a certain partner up to five times throughout the semester. If you want to work with somebody else on more than five assignments you will need to find another partner.

University Policies

Disabilities (ADA) Statement:
Students with disabilities who may need services or accommodations to fully participate in this class should contact Ann Smith, Director of Disability Services in 121 East Annex, (voice) 581-2319, (TTY) 581-2325 as early as possible in the semester.

Academic Honesty (plagiarism, etc):
Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

Class Disruption:
In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

Participation

If the only time you talk is when you are giving a presentation then you will have little opportunity to display your understanding of the processes being discussed and I will not have much information to use when evaluating your success in the class. Ask questions, answer questions, throw in comments, and generally add to the discussion as much as possible, particularly if you think you missed something or you have a stupid question. Odds are I just failed to explain it completely and other people are as confused as you are.

As with all classes, it is expected that you will treat others with respect. If you are repeatedly abusive toward your classmates you will be asked to leave and the day will be considered an absence for purposes of the attendance policy.

Grading

There are three components to the final grade in this class: assignments, class participation, and the final project. They are weighted as follows:

Assignments: 50%
Final Project: 30%
Participation: 20%

Note that completing the assignment goals you are given in class will only result in a grade of a C on that assignment. If you want a higher grade you must also apply your creativity to each assignment and come up with ways to improve your overall program using the principles that are discussed in class. The entire class is working from the same basic program template, but each final project should be distinctly different because of the extensions you choose to add that go beyond the baseline.

Class participation also includes occasional in-class activities like quick workshops or quizzes for grading purposes.

Screencasts

There is a saying that you have not mastered a skill until you have taught it to somebody else; one of the requirements of this class is that you do just that. The NMDTutorials page linked above is made of videos and quizzes that students have created to explain what they are doing to one another. At several points during the semester you will be given a list of potential topics for videos that you can choose from to record. The most useful tutorials will be rewarded with extra credit points on their grade. A more complete explanation of the requirements for these videos will be given when we discuss the first set of topics.

Timeline

Part I – Describing the World (in three words or less)		
1/15	Introduction, welcome, logistics	
1/17	Data and action	
1/22	Defining actions (Zork)	
1/24	Scripting actions	
Interlude – Operating Environments and Standards		
1/29	Organizing files	
1/31	Sharing files	
Part II – Building the Ultimate (digital) Machine		
2/5	Hello DOM	
2/12	Properties of divs	
2/14	Blocks of code	
2/19	Repetition and regularity	
2/21	Instructions	
Interlude – Wait, What Just Happened?		
2/26	Loops	
2/28	Conditions	

Part III – Modeling the World		
3/19	Describing a Card	
3/21	Encapsulating a Card	
3/26	Describing a Deck	
3/28	Playing Cards	
Interlude – On the Illusory Nature of Free Will		
4/2	States and Transitions	
4/4	Events	
Part IV – Programming		
4/9	Native objects	
4/11	External objects	
4/16	Program architecture	
4/18	Execution	
4/23	Testing code	
4/25	Testing interaction	
4/30	Work day	
5/2	Work day	
Finale		
Finals	Presentations	