CSS 341 : Fundamentals of Programming Theory and Applications
Course Syllabus-Autumn 2012

Instructor: Charles F. Jackels
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Office Hours: Tuesdays 11:00 - noon and Thursdays 3:30 – 4:30 PM, in the
                       Windows drop-in lab (UW1-310) In addition, I plan to schedule at
                       least one on-line office hour, probably on Wed. It is best to check
                       with me ahead of time, even for a visit during normal office hours,
                       especially if you are making a special trip for that purpose. .

Class Times: 1:15 – 3:15 , Tuesdays and Thursdays Room UW1-121

Prerequisite: CSS 161 or equivalent.
Mid Term Exam: November 1, in class

Final Exam: December 11, in class

Texts:
   "Learning JavaScript", 2nd Edition, by Shelley Powers, O'Reilly Media, Sebastopol
   CA, 2009.

Reserve Material: The text book and several other JavaScript books are on the course
reserve shelf in the library. A number of computer science related reference manuals are
available as E-books from the library. Journal articles and book chapters may be
included as required reading in the course. They will be available on electronic reserve.

Course Description from Catalog

CSS 341 Fundamentals of Programming Theory and Applications
  (Charles F. Jackels)
Fundamental concepts and techniques for analysis, design and implementation of
computer programming.

Specific Course Goals

We will be learning fundamental concepts and techniques in collaboratively solving
practical problems based on analyzing, designing, and implementing computer programs.
We will accomplish these goals by developing theoretical and practical programming
experience including:

- Modular design, logic flow, data abstraction and pseudo-code.
- Basic programming constructs, functions, and I/O.
- Introduction to sorting and searching algorithms and recursion.
- Programming development cycle, emphasizing testing and debugging
- Solving practical problems based on automating existing commercial applications.

Partner Assignments. You will be divided by the instructor into groups of two students each. These groups will be the basis for: a) discussions and active learning exercises both in class and out of class; b) collaborative programming assignments (MP's); and c) occasional presentations in class. *This work will be accomplished both in person and via electronic communication.*

Class Participation, Homework and Collaborative Problems.

Class Participation. Significant class time will be spent in discussion, active learning, in-class problem solving, occasional in-class quizzes, and student presentation. Students will be assigned grades based on their participation in these class activities as well as follow-up questions to be done after class. The greatest part of this grade by far will come from completing the active learning exercises in class. *If you are missing from class for any reason, you cannot make up the participation grade.*

Homeworks. There will be several graded individual homework problem assignments (HW's) given during the term. They may take the form of short answers, quantitative exercises, or programming problems. Generally, these will be individual efforts, but ones that permit consultation with your partner. The detail and extent of grading will vary from week to week, depending on the time available. *The homeworks will y be submitted electronically.*

Machine Problems. There will be a series of seven collaborative programming assignments (MP's). These must be addressed collaboratively, with a common grade for you and your partner. The MP's are the most important component of your grades. Details will be provided for each MP assignment. *The MP's will be submitted electronically.*

Grading of Machine Problems. These will be graded based on three major criteria: correctness, efficiency, and style. Here is the rubric I will follow when grading your programming assignments. Each submission will be accompanied by a description and assessment of the software development process used by you and your partner. That will receive 5-10% of your overall grade for the problem.

Back-up Copies. You are responsible for maintaining back-up copies of all assignments, computer programs, etc. If an assignment should be lost or misplaced during the submission or grading process, it is your responsibility to provide a copy of

that assignment upon request. Always maintain current backup copies of all of your work. Computer crashes <u>do not qualify</u> as "emergencies" in this class. We expect computers to crash; that is one of things they do.

Exams. The mid-term examination will be based upon approximately the first half of the course material.   The final exam will be cumulative, but with an emphasis on the last half of the course. The exams may be mixtures of programming problems, design discussions, short answer questions, and essays.

Classroom Rules. These basic rules, in addition to the requirements of the UWB Handbook, apply to the instructor and all students at all times in the classroom. If you cannot observe them at any time, you are expected to leave the classroom:
- No use of computers for web surfing, e-mail, or any other activities not directly related to class. *Only course work is to be done on the computers during class.*
- No headphones, blue tooth earphones, etc in the classroom.
- No cell-phone calls, rings, musical interludes, etc., during class. *If you must receive a call, read a text message, or otherwise be distracted, you are to leave the classroom while doing so.*
- All views are to be heard and engaged respectively. As scholars, we are expected to analyze subject matter critically and express reasonable positions that are based on logic and fact rather than on emotion. **In no case are *ad hominem* arguments permitted in CSS 341.**

Attendance: Class & Exams. Any excuse for missing an exam *other than illness or family emergency* must be cleared with me at least one week ahead of time. If you cannot attend class on an exam day because of illness or emergency, you are expected **before class** to contact me by phone, leave a voice mail message, leave a message for me with the Computing and Software Systems office, or leave me an e-mail message. Failure to notify me in one of these ways may result in you not receiving consideration for a make-up examination.

Regular class attendance is expected, although roll calls will not be generally taken. If you are not present to complete an in-class activity, that will, of course, profoundly affect your grade on that collaborative assignment. *Collaborative problem solving is a goal of this course.* Missed in-class work (for whatever reason) *cannot* be made up.

Late Assignments. Most course assignments have due dates, which provide a framework that assures mastery of certain concepts before moving on to other more complex ones. These dates also allow me to determine how well you achieve mastery of certain concepts in an allocated amount of time. They also provide assurance of equity and fairness to all class members. Assignments with due dates will not be accepted late, *unless otherwise noted in the assignment instructions or at the Catalyst Drop Box..* If you are out of town on an assignment due date, it is your responsibility to arrange for

internet access and submit the assignment electronically or to submit it before you leave. Most of the assignments allow late submission for a short period with a significant penalty.

Documented Disabilities

The University of Washington is committed to providing equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. If you believe that you have a disability and would like academic accommodations, please contact Disability Support Services at 425.352.5307, 425.352.5303 TDD, 425.352.3581 FAX, or atdss@uwb.edu. DSS will be happy to provide assistance. You will need to provide documentation of your disability as part of the review process.

Academic Honesty

The highest standards of academic honesty will be expected in this class. Cheating and plagiarism in any of their forms are unacceptable. At the least, a grade of zero will be assigned to any work that is the product of cheating or plagiarism. Work that is assigned to you alone is to be accomplished by you alone. When formal collaboration on assignments is permitted (e.g. MP's), that fact will be made explicit. Assume that all assignments are to be individual work unless I indicate otherwise.
The official UW Student Conduct Code and amplifications prepared for UWB Students and UW Seattle students generally may be of use to you.   Each student is responsible to read and understand that information.   *It is your responsibility to clarify with me any uncertainty that may exist on this question. Do not assume that an action is acceptable; ask me to be sure.*

> **Collaboration:** Some assignments (HW's) are individual, while others (MP's) are formal collaborations with your partner.. Discussion of homework problems with fellow students is ok, provided you do not exchange algorithms, or copy code, or give specific answers to problems. *You may look to the other students for hints and suggestions about how to approach the problem, not for solutions to it.* You may always discuss any problem with me. You are expected to subscribe to the highest standards of honesty. Failure to do this constitutes plagiarism. Plagiarism includes copying assignments in part or in total, debugging computer programs for others, verbal dissemination of algorithms, and results, or using solutions from other students, solution sets, other textbooks, etc. without crediting these sources by name. Plagiarism will not be tolerated in this class, any more than it would be in the "real world". Any student guilty of plagiarism will be subject to disciplinary action. In the "real world", you are responsible for the security of your intellectual property. In our case, you are responsible for the security of your source code (either on public hard disk, or on printed copies) and copies of your homework assignments. Remember to erase your work from all public hard disks, and to dispose of the hard copies of your source code and assignments with care. If someone has identical solutions to yours, you are both necessarily suspects of plagiarism.

Work turned in for this course may be subject to electronic checking for plagiarism.

Grades.

The final grade will be determined numerically by averaging your scores with the following weights:

Final Exam	15%	Homework (HW's)	10%
Midterm Exam	15%		
Group Programming Assignments (MP's)	50%	In-class activities: quizzes, participation, and exercises	10%

Most grades given during the course of the term and the overall course grade will be based on a 100-pt scale. The **official decimal class grades** (0.0 - 4.0) will be determined from a weighted average of your individual grades. A weighted average of 96 will be assigned a decimal grade of 4.0, and a weighted grade of 55 will be assigned a decimal grade of 0.7. Intermediate grades will be determined by a linear relationship between these two limits.   This scale represents a *minimum* decimal grade. If I judge it to be warranted, I will give higher grades than those indicated by this scale. Based on experience, the class GPA will likely fall in the range 2.7-3.1 (a "B" average).

The following table represents the official UW conversion of standard letter grades to the UW decimal grade scale and the conversion to the 100-pt scale used in this class:

	A Range		B Range			C Range			D Range		
Letter	A	A-	B+	B	B-	C+	C	C-	D+	D	D-
Min Decimal	3.9	3.5	3.2	2.9	2.5	2.2	1.9	1.5	1.2	0.9	0.7
Min 100-pt	95	90	86	82	77	74	70	65	61	57	55

Library Materials: There is a link on the course home page that connects to the library reserve catalog. Many useful reference materials are to be found in one of the UW libraries on the UWS campus rather than at UWB. These can be obtained with little effort via electronic document delivery or the courier service. Make sure you know how to use this service.

Use of E-Mail

You will be <u>required</u> to use e-mail as part of this course. Since our personal contact hours are quite limited, this will be a major avenue for communication. In addition, I will use the class e-mail list, listserve, and web page as means of broadcasting information to the class. It is assumed that class members are reading their e-mail on a daily basis. You may, of course, read your e-mail anywhere of your choosing, but it is <u>required</u> that you will have an active account of the form UWNetID@u.washington.edu that you check or forward daily. You can set up your account from the UW Web page. There is also a link on our course home page that takes you to UW on-line documentation that explains how to set up an account, how to send e-mail, etc.

There is a web-based U-mail form set up that allows you to send me either identified or anonymous e-mail from the browser. It can be found at URL**:
https://catalysttools.washington.edu/umail/form/jackels/3026**
and there are links to this Umail form on the course home page.

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Class Listproc

A listserver has been set up for the class. Any message or reply sent to this address is rebroadcast to the entire class, but only after receiving my authorization. Your UWNetID e-mail account is automatically subscribed to this listproc. The e-mail address for this is**:
*css341a_au12@u.washington.edu***

Note the <u>single</u> underscore between "css341a" and "au12"; it is required.

Use of Class Discussion Board

I have set up a computer discussion board for our use. This is an excellent medium for class discussions. Any class member can post to the bulletin board. It forms a "running" conversation that can be about the lectures, problem assignments, etc. It also contains some archived conversations from prior years. I am using Go-Post for this purpose. The bulletin board is found at:
https://catalyst.uw.edu/gopost/board/jackels/12156/
A link to this bulletin board will appear on the course web site. Your access to the board will be via UWNetID. After you login to the board, you may click on "Profile" and then click on "Notifications" to select whatever notification you may prefer.

Electronic Submission of Assignments

Assignments for this course will be submitted electronically. Detailed instructions are found in the assignments and on the drop box sites:

- The Catalyst drop-box site for individual homeworks (HW's) is found at:
  https://catalyst.uw.edu/collectit/dropbox/jackels/22870

- The Catalyst drop-box site for the machine programming problems (MP's) done with your partner is found at:
  https://catalyst.uw.edu/collectit/dropbox/jackels/22869

Course Home Page

My personal home page is found at the URL:
http://faculty.washington.edu/jackels

Click on my home-page link referring to this course and you will find yourself at the course home page: http://faculty.washington.edu/jackels/css341.a12/index.htm

Tentative Class Schedule (subject to change)

Week	DATE	READING	TOPICS
1	Sep 25	Powers: Ch 1; Ch 2; pp 189-192;	Intro, Working with Java Script , HTML
	Sep 27		IO, and event control with window object.
2	Oct 2	Powers: Ch 3; and pp 92-95.	Control Structures (decisions), Flowcharting, MATH object
	Oct 4	Powers: Chs 6 (123,133-138) & Ch 8(165;175-184).	Browser, debugging, F12 developer tools
3	Oct 9	Powers: Chs 7 and 9	Working with Commercial Applications (Excel)
	Oct 11		Control Structures (Loops)
4	Oct 16	Powers: Ch 5	Functions: Scope Rules
	Oct 18	Powers: Ch4	Objects: File System, Datatypes, RegExp, Arrays; Text files
5	Oct 23	Flanagan, pp 149-50	Working with Spreadsheets and word processors
	Oct 25		Problem Solving with Control Structures ; Sorting with Excel. Charts and Tables in spreadsheets.
6	Oct 30	TBA	Continuation Software Inspection
	Nov 1	TBA	**Mid Term Exam**
7	Nov 6	Powers: pp 111-12	Recursions ;
	Nov 8	TBA	Working with Outlook and Email Systems
8	Nov 13	Powers: pp 75-81	Working with Databases
	Nov 15	TBA	Working with Databases
9	Nov 20		Working with Databases
	Nov 22	TBA	**HOLIDAY**
10	Nov 27	TBA	Working with Databases
	Nov 29	Powers: pp 81-89	Regular Expressions; working with strings
11	Dec 4	TBA	Regular Expressions; working with strings
	Dec 6	TBA	Review
12	Dec 11	{review}	**Final Exam**

Week	Date	MP's	Hwk's	Miscl
1	Sep 29			Class Survey
2	Oct 1		HW0- due	
	Oct 6	MP0 due		
3	Oct 8		HW1 due	
	Oct 13	MP1 due		
4	Oct 15		HW 2 due	
	Oct 20	MP2 due		
5	Oct 27	MP3 due		
6	Oct 29		HW 3 due	
	Nov 3	MP4intermediate		
7	Nov 5			
	Nov 10	MP4 due		
8	Nov 12		HW 4 due	
	Nov 15	MP5intermediate 11/15		
9	Nov 21	MP5intermediate 11/21		
10	Nov 26	MP5 due		
	Nov 28	MP6 intermediate		
11	Dec 4	MP6intermediate		
12	Dec 9		HW 5 due	
	Dec 11	MP6 due		

These assignments are to be turned in electronically before deadlines shown at the drop box sites.

Drop boxes have been set up at the course turn-in site:

https://catalyst.uw.edu/collectit/dropbox/jackels/22870   (HWs)

https://catalyst.uw.edu/collectit/dropbox/jackels/22869   (MPs)

Other forms of submission, such as e-mail attachments, will not be accepted.

Once during the term your work group will be asked to make a short presentation (15 min) on a journal article related to software engineering. The article will be assigned to you. This will count as one of our class participation exercises.