Carleton University
Department of Systems and Computer Engineering

SYSC 4504    Distributed Network Processing    Fall 2017

Course Outline

NO MANDATORY LABS AND ASSIGNMENTS

Instructor: Thomas Kunz, CB 5202, tkunz@sce.carleton.ca
Office Hours: Tuesdays 2-3 pm, CB 5202

Course Objectives:
Distributed Systems are ubiquitous and of unprecedented importance. Examples of the Web and Internet-based applications illustrate the development and the deployment of these architectures. In distributed systems, resources and users can be located geographically anywhere. The objective of the course is to discuss the fundamental concepts and the software solutions, in the design of a distributed system, in particular the use of WWW-related technologies. During lab sessions, students will apply the concepts presented in class in the form of programming exercises. Programming will be in Java or variants such as JavaScript. The official undergraduate calendar description can be found at http://www.carleton.ca/cuuc/courses/SYSC/


(Note: the first edition of the book is probably okay as well, but all references will be to the second edition)

Prerequisites: SYSC 2004 or SYSC 2100. Additional recommended background: SYSC 4602 or SYSC 3303

Students who have not satisfied the prerequisites for this course must either a) withdraw from the course, or b) fill out a prerequisite waiver from www.sce.carleton.ca/ughelp. Students not meeting these conditions will be deregistered from the course after the last day for course registration.

Other References:
I will use cuLearn for managing course interactions, grades, as well as assignment and lab submissions. There is also a course webpage where I will post announcements, assignments, as well as other course material. The webpage is at http://kunz-pc.sce.carleton.ca/sysc4504/, and access to parts of the course material is password-controlled.

Computer Lab:
A 3-hour biweekly computer lab session has been scheduled, in which you will work on problems under the supervision of a TA. The lab is during odd weeks (see lab schedule for location). Students can also use the undergraduate computer labs whenever the Mackenzie Building and Minto CASE are open, except for those times when labs are reserved for specific courses. The department maintains a Health and Safety manual for work in the computer labs; you can find the manual at: http://www.sce.carleton.ca/courses/health-and-safety.pdf

Attendance:
Students are expected to attend all lectures and be able to attend the lab periods as required. The Faculty of Engineering and Design requires its students to have a conflict-free timetable, so requests to accommodate missed exams, assignment due dates, etc., because of conflicts with other courses, jobs, or vacation plans will not be considered. I may periodically check attendance at the beginning of the class and keep this as a record.

Assignments and Exams:
Students will be evaluated by means of assignments, a midterm exam, and a final exam. The midterm exam will be November 2, from 6 to 7:30 pm. Students who are unable to write the exam because of illness or other circumstances beyond their control must provide evidence. In the case of illness, this requires a medical certificate dated no later than one working day after the exam. The certificate must specify the date of the onset of the illness, the (expected) date of recovery, and the extent to which the student was/is incapacitated during the time of the examination. If this information is provided...
to the instructor no later than five working days after the exam, the final exam mark will be used as the midterm exam mark; otherwise, the mark for the missed exam will be 0. The final exam will be scheduled during the university exam period in December 2016.

There will be a number of assignments and labs. Doing those is the best way to learn the course material, so students are encouraged not to “write them off” just because of its relative low weight in the overall grading scheme. Labs are due at the end of the scheduled lab, assignment due dates will be clearly stated on the assignment handouts. Late assignments will not normally be accepted, and will receive a mark of 0; however, students who cannot submit an assignment by the due date for valid medical or compassionate reasons should contact the instructor immediately and prior to the due date to arrange for appropriate accommodations (e.g., an extension of the due date). Arrangements must be made in a timely manner, otherwise the assignment will be considered late and not accepted.

Students are encouraged to discuss design issues when working on assignments; however, you are expected to write your own programs. There is a fine line between cooperating with your colleagues (discussing problems and ideas) and copying program code (plagiarism). Not only is plagiarism an instructional offense (see the current Undergraduate Calendar, Academic Regulations of the University, Section 14), but doing the assigned work by yourself is by far the best way to prepare for the exams. To facilitate discussion of assignment-related issues, cuLearn maintains a discussion topic for each assignment, which will be monitored by the TA(s) and myself.

For each of the 6 labs during the term (labs are in odd weeks only), there will be a lab sheet with exercises to work through. Then, there will be a lab assignment that you will need to hand in (through cuLearn) for the lab credit. If they are available, I will post the lab sheets on cuLearn before the labs, to allow you to study them as a preparation for the lab. The lab assignments will cover the following topics:

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<thead>
<tr>
<th>Lab 1</th>
<th>HTML</th>
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<tr>
<td>Lab 2</td>
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<td>Lab 3</td>
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<td>Lab 4</td>
<td>PHP</td>
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<td>Lab 5</td>
<td>SQL</td>
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<td>Lab 6</td>
<td>Managing State</td>
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**Final Exam:** *Is for evaluation purposes only and will not be returned to the student.*

A final exam will be held during the University’s December examination period. Where circumstances warrant, apply to the Registrar’s Office for deferral of the final exam. However, in case of deferral, the following rule will apply:

Students who miss the final exam may be granted permission to write a deferred examination (see the Undergraduate Calendar for regulations on deferred exams). These students have additional months to study and a less crowded examination schedule compared to their colleagues who write the final exam in December. As such, it is only fair to expect substantially better performance from these students on the deferred examination than on the December final exam.

Both exams will be open textbook. Only proper copies of the official course textbook will be accepted, no alternative textbooks, photocopies, ebooks, etc.

**Grading Scheme and Schedule (tentative, subject to change):**

To pass the course, a student must pass the final examination (D- or better). For these students, the marks will be calculated as follows (with a final score of below 50 resulting in course failure):
Accommodations:
You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website http://www.carleton.ca/equity/.

Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website http://www.carleton.ca/equity/.

Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). Requests made within two weeks will be reviewed on a case-by-case basis. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam.

Plagiarism:
Plagiarism (copying and handing in for credit someone else's work, as well as allowing someone else to copy your own work) is a serious instructional offense that will not be tolerated. Please refer to the section on instructional offenses in the Undergraduate Calendar for additional information.

Tentative Course Outline:
1. Introduction
2. How the Web Works
3. Introduction to HTML
4. Introduction to CCS
5. HTML Tables and Forms
6. JavaScript 1: Language Fundamentals
7. JavaScript 2: Using JavaScript
8. Introduction to Server-Side Development with PHP
9. PHP Arrays and Superglobals
10. Working with Databases
11. Error Handling and Validation
12. Managing State
13. Security
14. XML Processing and Web Services (optional, depending on time)
These topics correspond to specific chapters in the course textbook. I expect that you read the course textbook in preparation for the lectures.