CSCI 330: Introduction to Computer Systems

Course Information and Syllabus
Semester I, 2015–2016

Lectures	G hour: 2:00–2:50 on Mondays, Wednesdays, and Fridays
Room	MacMillan 117
Lecture Notes	http://www.cs.brown.edu/courses/cs033/lectures.html A recording of each lecture will be available soon after it is given.
Text	Computer Systems: A Programmer's Perspective, 2nd Edition, Bryant and O'Hallaron, Prentice Hall 2011 (the 3rd Edition is also ok)
Prerequisite	CSCI 150, 180, or 190. In particular, you should be a competent Java programmer (though we won't be using Java)
Instructor	Tom Doeppner (twd@cs.brown.edu)
Office	CIT 405, x3-7633
Professor's Office Hours	Mondays 4 to 5, Wednesdays and Fridays 3 to 4, by appointment, or just stop by.
Head TAs	Dylan Gattey (dgattey), Advik Iyer Guha (aiguha), Ian Reardon (ireardon)
Master's TA	Jordan Hendricks (jordan)
UTAs	Anne Rothen (arothen), Cesar Guerrero (cguerrer), Erik Ronning (eronning), Frances Chen (flchen), Frederick Rice (frice), Guillermo Beltran (gbeltran), Gareth Chen (gdchen), Grant Gustafson (ggustafs), Guo Wang (gw9), Hassan Sufi (hsufi), Joseph Stein (jas14), Justin Brower (jbrower), John Adler (jcadler), James Cohan (jfcohan), Paige Stoermer (jstoerme), Ian Wyszynski (jw), Kevin Cole (kbcole), Kyle Laracey (klaracey), Meryl Charleston (mcharles), Martin Zhu (mjzhu), Nicholas McKenna (nmckenna), Noah Webb (nwwebb), Ping Hu (ping), Peter Kirschner (pkirschn), Quinn Li O'Shea (qoshea), Surbhi Madan (sm15), Sorin Vatasoiu (svatasoi), Scott Zellers (szellers), Vesselina Ratcheva (vratchev), Zheng Yang (zy15)
TA Office Hours	See http://cs.brown.edu/courses/csci0330/hours.html
Clickers	The course will make use of "clickers": at each class meeting there will be one or more questions to which you must respond using your clicker.
Grading	Class participation via clickers is worth 6% of the course grade. You will get an A for answering a question correctly, a B for answering incorrectly, and no credit for not answering. Projects are given letter grades, and thus any "curving" is done on a per-project basis. Labs are given A's if done on time, C's if no more than a week late, and

	NC's if beyond a week late. The final course grade is the weighted average of the clicker, lab, and project grades. Each one-week project, as well as the first, is 6% of your final grade; each of the two other projects is 12% of your grade. Each lab is 1.833% of your final grade. Grade averages are computed using a 4-point scale: an A+ is worth 4.3 points, an A 4 points, an A- 3.7 points, a B+ 3.3 points, etc. For determining your final grade, a weighted course average of 3.5 and higher is an A, 2.5 and higher is a B, and 1.5 and higher is a C. In addition, you must pass all projects to get an A for the course; you must pass all but one to get a B for the course. Please note that your assignments will be graded by the TAs, most of whom are undergraduates. If you have a question about the grading of an assignment, please bring it up first with the TA who graded it. If your question is not resolved to your satisfaction, then bring it up with Prof. Doeppner.
Incomplete Policy	Incompletes are granted only under exceptional circumstances (e.g. severe illness, death in the family, kidnapping, etc.; too heavy of a course load is not sufficient reason for an incomplete). Getting a dean to certify your reason for requesting an incomplete helps, but is not sufficient.
Due Dates	Assignments must be handed in by 11:59 pm on their due dates. Labs are due during the last lab hours before the next lab is released.
Late Policy	Everyone is allowed a total of 4 late days on assignments free of charge, but no more than two lates days may be applied to any one assignment. Beyond that, you are penalized one grade level (e.g., B work goes down to a C) for each day it is late. The last assignment must be turned in by 11:59pm, Dec. 16, regardless of how many late days you have. We will apply late days to assignments in an optimal fashion (with respect to your grade). Note that late penalties are applied after grades have been curved. If you are ill, you may get an extension without using late days. Please get a note from health services and contact Prof. Doeppner.
More Information	For more in-depth information about the course, refer to the Course Missive and Collaboration Policy linked from the course website.

Lectures and Due Dates

Date	Topic	Readings	Out	Due
Sept 9	Intro to CSCI 330; Intro to C			
Sept 11	Intro to C		Lab01 – Life; Maze	
Sept 14	Intro to C			
Sept 16	Intro to C			

Sept 18	Intro to C			
Sept 21	Intro to C		Lab02 – Tools	
Sept 22			Data	
Sept 23	Data Representation			Maze
Sept 25	Data Representation			
Sept 28	x86 Assembler Language		Lab03 – x86 Part 1	
Sept 29			Buffer	Data
Sept 30	x86 Assembler Language			
Oct 2	x86 Assembler Language			
Oct 5	x86 Assembler Language		Lab04 – x86 Part 2	
Oct 6			Bomb	Buffer
Oct 7	x86 Assembler Language			
Oct 9	Processor Arch. and Performance			
Oct 12	Holiday!			
Oct 13			Performance I	Bomb
Oct 14	Processor Arch. and Performance			
Oct 16	Processor Arch. and Performance			
Oct 19	Memory Hierarchy		Lab05 – Linking and more tools	
Oct 20			Performance II	Performance I
Oct 21	Memory Hierarchy			
Oct 23	Memory Hierarchy and Performance			
Oct 26	Architecture and OS		Lab06 – Profiling	
Oct 27			Shell Part 1	Performance II
Oct 28	Files			
Oct 30	Files			
Nov 2	Signals		Lab07 – Signals	

Nov 3			Shell Part 2	Shell Part 1
Nov 4	Signals			
Nov 6	Linking and Loading			
Nov 9	Memory Management		Lab08 – Alloc	
Nov 10			Malloc	Shell Part 2
Nov 11	Memory Management			
Nov 13	Memory Management			
Nov 16	Libraries		Lab09 – VM	
Nov 18	System-Level I/O			
Nov 20	Network Programming			
Nov 23	Network Programming		Lab10 – Network	
Nov 24				Malloc
Nov 25	Holiday!			
Nov 27	Holiday!			
Nov 30	Concurrent Programming		Lab11 and 12 – Concurrency 1 and 2	
Dec 1			Database	
Dec 2	Concurrent Programming			
Dec 4	Concurrent Programming			
Dec 7	Concurrent Programming			
Dec 9	Concurrent Programming			
Dec 16				Database