Concepts for Advanced Computer Usage

Computer Science 200
Fall 2016

Barbara Daly
This document is required reading. Ignorance of its content will not exempt you from any course requirement.
## Course Staff

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Course Communication

E-mail:

When sending us e-mail, please start the subject line with “CS200...” (for easier filtering and faster email response)

Avoid using hotmail, gmail, yahoo, etc, which are more likely to be intercepted by spam filters.

CS200 staff will use your UW account (userid@uwaterloo.ca) if we need to contact you to ensure that we do not release private information to a third person. (This is university policy.) If you wish, you may arrange for email sent to your UW e-mail account to be forwarded to an account of your choosing—see

https://ego.uwaterloo.ca/~uwdir/Update

If you do, it is your responsibility to ensure that e-mail can be received at the forwarded address. In all cases, you are expected to check your e-mail at least once a day.

Twitter:

Course updates and reminders will be tweeted from @CS200uWaterloo. We will discuss the use and effectiveness of this social media tool throughout the term.

If you do not have twitter, the tweets can be seen on the Learn Announcements page.

Pinterest:

Interesting articles or useful instructional videos can be found at our Pinterest account:

https://www.pinterest.com/cs2000143
Course Organization (Lectures)

“Lectures” focus on important and/or difficult concepts
learn straightforward material on your own

Attendance is mandatory
you can’t expect to do well without attending lectures
there are no useful textbooks
please be on time!

Lectures will usually be a mixture of
things you know & things you don’t know

Classroom Etiquette

Please do not bring/use laptops in class. They are distracting to yourself and others and you will be able to focus on material and important information better.

The following article discusses students’ learning abilities if handwritten notes are taken.

http://bit.ly/1sRqGBL
Lecture Strategies

Lecture slides

The slides for each lecture will be available via the “Content: Fall 2016 Lectures” on the CS200 learn.uwaterloo.ca site the day before lecture. A revised version, fixing any typos discovered during lecture, will be posted by 18:00 on the following day. Other class handouts, if any, will be available in the same location.

The previous term’s slides are also available on the course website.

These slides are an outline of each lecture; you will need to supplement them with your own notes. They are not a substitute for coming to lecture!

Lectures will also be available from the course website:

https://www.student.cs.uwaterloo.ca/~cs200/

Take notes

these slides are only an outline — they don’t stand alone

Review your notes promptly

to fix concepts in your mind
to formulate questions
  — not everything is immediately obvious...

high-light key material
Social Media

Each lecture we will briefly look at something discovered in social media or ethics of technology that has a powerful impact on our society and day to day lives.

We will be utilizing Twitter and Pinterest as a means of course communication.

@cs200uWaterloo

https://www.pinterest.com/cs2000143/
Organization (Labs)

Platform
Macs

Where
in MC 2062/3 (scheduled labs)
on your own machine
(most CS200 apps are cross-platform)

Lab material will guide your learning
but not — usually — step-by-step

Labs are a mixture of
lecturettes, which typically happen at the beginning of the lab
demos
supervised work on assignments
Assignments

Weekly through Week 12

Due Tuesdays at 9:00 am unless otherwise stated.
Generally returned in the first lab of the following week.

Some questions can be done in groups of two.
Be sure you understand what your partner does!

Marking questions / mistakes

must be raised within two weeks of return

Late Policy

10% per day, but no later than the Friday following the original due date.
If your assignment is late, marking it has minimal priority

BUT, you have 5 free slip (aka “late”) days for emergencies or whatever (your choice)
distributed across assignments as you wish
use them wisely, and don’t expect more!
Examinations (1)

The midterm:
   The week of Oct 27th at 10:00 am (in lecture)

Exams emphasize concepts
   mostly short essay questions
   + a few fact-testing questions
      eg assignment- & lab-based questions
   + a few keyword definitions

50 – 75 % of the essay questions
   will be from the CS200 Study Questions on Learn
   with minor modifications / substitutions
Examinations (2)

Understand technical terms (weekly keywords)
so you understand the questions
posted to the Keywords discussion board on Learn

Lab Final
near the end of the lecture period
the lab exam primarily tests your ability
to master new features in familiar applications efficiently
to master new applications efficiently
though of course it assumes you’ve absorbed the course material

Read the sample exams online the first week of classes so you’ll know what to expect
Course Outline

Week 1  (Sept 8):    Course Intro
Week 2  (Sept 13):   Styles in Word Processing (MS Word)
Week 3  (Sept 20):   Pixel Graphics (Adobe Photoshop)
Week 4  (Sept 27):   Geometric Graphics (Adobe Photoshop)
Week 5  (Oct 3):     The Web, HTML, CSS & Forms (TextWrangler)
Week 6  (Oct 17):    Database Intro (FileMaker)
Week 7  (Oct 25):    Review & Midterm (Oct 27)
Week 8  (Nov 1):     Application Scripting (MS Excel)
Week 9  (Nov 8):     Database Fundamentals (SQL)
Week 10 (Nov 15):    Advanced Database (FileMaker)
Week 11 (Nov 22):    Application Scripting (FileMaker)
Week 12 (Nov 29):    Review

+ weekly snippets on
system management, hardware, social media, pearls (know these by heart!),
Marking

Assignments ~ 25 %
Lecture Midterm ~ 25 %
Lecture Final ~ 30 %
Lab Final ~ 20 %
Clickers ~ bonus (to be determined)

The course marks will be adjusted if appropriate

You must pass the lecture final to pass the course

if you fail the final exam your course mark is your final exam mark
Clickers
Administrivia (1)

Course notes are no longer available but relevant support documents are on Learn. They contain:

- Introduction to the Course Environment
- Readings
- Reference material
- Study questions
- Sample exams
- and other useful material

The course message board is located at

learn.uwaterloo.ca

The course web site (“cws”) is located at https://www.student.cs.uwaterloo.ca/~cs200/. It contains

- staff contact info
- sample exams
- lecture slides for the current & previous terms
- assignments for the current & previous terms
- pearls
- FAQs
- list of books on reserve in the library
- hints on taking notes
The first assignment is due next Wednesday
(September 14th, 9:00 am)

Labs start this week
“CS200 — Introduction to the Course Environment” on Learn

Schedule:
Section 101 : 2:30pm - 4:20pm, Tues & Thurs
Section 102 : 12:30pm - 2:20pm, Tues & Thurs
Administrivia (3)

Handin codes — eg 101DalB

your section number (101 or 102)

followed by the first 3 characters of your last name (eg Dal, from “Daly”)

followed by the first character of your first given name (eg B, from “Barbara”)

Expectations

Our job
is to pick the right things for you to figure out

Your job
is to figure them out!

Answering questions
often we’ll suggest how to figure out the answer rather than just telling you
— learning how to figure things out is more important!
Previous Experience Summary (1)

CS200 students are assumed to have acquired the knowledge imparted by CS 100 or from some other source. Here’s a capsule summary of highschool content and assumed knowledge.

What is a computer — the naming of parts

Word Processing
   editing, word wrap, “non-printing characters”
   character, paragraph, & document attributes

Spreadsheets
   cells, cell addressing, cell formulas, cell formatting
   named ranges

Simple Programming Concepts
   variables, assignment statements, if-statements, loops
   procedures & functions
   input & output
Assumed Knowledge Summary (2)

Networking and Telecommunications
  e-mail
  the internet

Problem solving with a computer
  “If somebody were to drop you into a chair in front of Word, Excel, or FileMaker, you could use it effectively to do the usual sort of thing”
CS200 Summary

Given that you’ve acquired the requisite background, here’s a summary of CS200’s objectives.

Learn how to use computers efficiently; learn how to learn to use computer applications efficiently

give a man a fish, feed him for a day;
teach a man to fish, feed him for a lifetime

The goal:

That you emerge a knowledgeable, efficient user of computer technology, able to

learn new applications efficiently
purchase and maintain your own PC

where “maintain” means
install new software
connect new hardware
maintain file systems
localize problems
explain problems to a technician

Computers are not the point of CS200; using computers well to do interesting and useful things is the point.
CS200 Emphasis

The emphasis in CS200 is on important concepts
that transcend particular applications / platforms
that help you learn and work efficiently

There is considerably more emphasis on process, and less on facts, than in CS100
learning on your own
learning by doing
methodologies for learning

You should come to think of applications as tools,
and expect that most jobs will require moving data between several applications

Quality is important, too, though it’s not our primary emphasis. (CS300?)
More on CS200 Assumptions — Background

You are assumed to have some computer science or basic application experience

Everyone will have a bit more here, a bit less there.

You are expected to pick up missing pieces on your own.

(See us for suggestions.)
CS200 Assumptions — Environment

Your computing environment will change rapidly for the foreseeable future:

- new & faster hardware, sometimes requiring new versions of your software
- new releases of software you’re already using, containing new features and sometimes with a changed interface
typically at least once per year

And you’re often forced to upgrade software because vendors don’t support older versions.

You will be more confident buying and maintaining your own PCs
your company’s IT people won’t make house calls...

So you need to know a bit about

- hardware
- operating systems
- “file systems”

and become familiar with the standard trade journals

- MacWorld www.macworld.com
- PC Magazine www.pcmag.com
- PC World www.pcworld.com

in which you will find product reviews and tutorials.
So ... should you take CS200 this term?

See (also) the cws at

https://www.student.cs.uwaterloo.ca/~cs200/

for

- a discussion of the background expected for CS200
- a discussion of course goals
- a sample midterm
- a sample final
- a sample lab exam
- last term’s lecture slides and assignments

especially the page “About > Should I take CS200?”
Take CS200 because

you are excited to learn something new

your goals are to extend your learning of things you already know

Cooperation

with respect to ideas is encouraged

but ...

you punch your own keys

& you do not copy other people’s/group’s assignments

Thus it’s ok to discuss how to do something in general terms (ie concepts),
but not to

    copy/paste another person’s answer for an assignment

    or to just type it in

If you’re not sure what’s appropriate

    ask us, and/or

    state the nature of your cooperation on the assignment
From the CS Curriculum Committee:

Students should be aware of the seriousness of cheating and the penalty associated with it. The standard penalty for cheating will be the assignment of a grade of 0 for the assignment, test, or exam in question, with a minimum deduction of 5% from the final course grade. All such incidents will also be reported to the Associate Dean (Undergraduate Studies) of the student’s faculty.

Cheating includes copying from another student’s work or allowing another student to copy from one’s own work, consultation with any unauthorized person during an examination or test, and use of unauthorized aids. University policy regards plagiarism or copying as an academic offense. All material submitted for marking must be the original work of those students submitting the material. A student’s signature on an assignment or exam certifies that the material is the student’s work and that it does not contravene the University regulations concerning plagiarism, copying or other academic offenses.

It is understood that there will be “gray area” cases in which less than the standard penalty will be appropriate and that in extraordinary cases, heavier penalties, such as suspension or expulsion, may be sought through the appropriate Faculty
How To Do Well in CS200 (1)

Attend lectures & labs
   Review your lecture notes within a day of each lecture
   high-light key phrases
   identify what you don’t understand

Read assignments carefully (preferably more than once!)
   high-light key phrases

DO the assignments!
   & understand what your partner does, when you have one

Practice the pearls

Think about what you’re doing

Think about how you’re doing it

If assignments consistently take too much time
   talk to an ISA or instructor

Top 10 reasons to go to class
How To Do Well in CS200 (2)

Review the sample lab & lecture exams *this week*

Ask questions!

they’re the best way for us to find out
what we’ve failed to explain
whether you understand something
that you’re especially interested in something

use office hours
sometimes the instructor will pause during lecture
to let an idea bounce around in your head
to give you a chance to ask a question if,
as an idea bounces, you’re unsure about something

There is typically a short Q & A at the beginning of lecture
Working At Home

You are welcome to do so, but

some things will be explained only in lab

that’s where we’ll help you learn-to-learn

If you work at home

it is your responsibility to ensure, ahead of time,

that your files can be opened and read in the lab

eg: check application versions & file formats

Most software used is available on both Macs & PCs

eg: through the University computer store (for a price...)

eg: Excel, FileMaker, MySQL, Photoshop, Word

It is easiest to use a USB stick or a remote file service like Dropbox to transfer files between home and the lab.
Things You Need For This Course

• USB (for the backups assignment)
• iClicker
• *The Mac is Not a Typewriter* by Robin Williams
• *The Non-Designer’s Design* Book by Robin Williams
• to come to class
“Pearls”

We will discuss seven pearls

one / week or 2

You are expected to memorize (as well as understand) them

There is ALWAYS a pearl question on the midterm and final

See “lectures > Pearls” on the cws

But perhaps one size doesn’t fit all?

would your list be different?

*think about this as the term progresses*

More generally,

as you work on assignments,
periodically ask yourself

“How could I work more efficiently?”

“How can I motivate myself to ...”
The Model Pearl

**Application “data objects”**

what you manipulate

eg Tables in a word processor, ...

we’ll see several more examples later today as we discuss pixel graphics

**The application’s interface**

how you manipulate those data objects

what operations are grouped in each menu?

are there interaction techniques used often & consistently?

eg click-down-drag-release to select a range of contiguous objects

eg shift-option-click repeatedly to select multiple discontiguous objects

eg command-S to save the current document

are there icons used consistently to represent analogous operations?

eg [Image]