

Welcome to CS3157!

Advanced Programming

Fall 2002

Section 001: MW 1.10pm - 2.25pm 717 Hamilton

Professor Elizabeth Sklar

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office: 460 Computer Science building (through Mudd)

office hours: Tue 12noon-1pm and Wed 11am-12noon

Class web page:

http://www.columbia.edu/~cs3157

course objectives.

- to give you practical, hands-on experience at advanced programming tasks
- to learn many new tools and learn how to learn other tools
- to simulate a “real-life” programming environment in which you have a customer and you have to answer to that customer

resources.

- lectures
- lecture notes
- recitations
- books
- the Internet
- class web page
 - *<http://www.columbia.edu/~cs3157>*
- TAs
- me
 - **BUT DON'T E-MAIL ME CODE!!**

textbook.

oh wait...

There is NO set textbook for this class.

oh dear...

but I will give you some references

and you will learn how to find your own references, both on-line, in the bookstore and

oh my...

in the library.

assessment.

- out of 110 points (10 points possible extra credit)
- 6 homework assignments (85 points total)
 - homework #1 (10 points) – due Wed Sep 18
 - homework #2 (15 points) – due Wed Oct 2
 - homework #3 (15 points) – due Wed Oct 16
 - homework #4 (15 points) – due Wed Oct 30
 - homework #5 (15 points) – due Wed Nov 20
 - homework #6 (15 points) – due Mon Dec 9 (during reading period)
- 5 quizzes (25 points total)
 - quiz #1 (5 points) – Mon Sep 23
 - quiz #2 (5 points) – Wed Oct 9
 - quiz #3 (5 points) – Mon Oct 28
 - quiz #4 (5 points) – Mon Nov 18
 - quiz #5 (5 points) – Wed Dec 4
- There will be NO MIDTERM and NO FINAL (*yippee!*)
- *Note that all dates are tentative and subject to change.*

a word about homeworks.

- MUST be done on your own!!!
- this is NOT a group project class
- you can get help from the TAs and me
- you can also get help from friends, following the “NOT CHEATING” rules of the department as outlined here:
<http://www.cs.columbia.edu/academicpolicies.html>
- *you MUST acknowledge all help received by citing the names of those who helped you in the comments of your program and/or your assignment documentation*
- this not only protects you from being accused of cheating, but also protects you in case your helper gives you misinformation
- this also lets me know who is really helpful, which is useful in selecting TAs for next semester

homeworks: submission policy.

- homeworks are due on the day that they are due
- here are the rules — please know them well:
 1. all homeworks **MUST** be submitted electronically by 6AM on the due date
 2. you **MUST** submit an **ELECTRONIC** copy of all portions of all assignments (all assignments will have both a programming and a documentation portion)
 3. electronic submissions:
 - submission time is clocked according to the time of your electronic submission
 - be aware that the system tends to get clogged when too many people try to submit at the same time — so **AVOID A LATE PENALTY** and don't submit too close to the 6AM deadline!
 - you may have a total of 50 hours grace time for lateness of electronic copies, which may be used up all at once or split between several assignments
 4. hardcopies:
 - all homeworks will involve a documentation portion as well as a programming portion

- a hardcopy of the documentation **MUST** be provided **AS WELL AS AN ELECTRONIC COPY**
- the hardcopy of the documentation portion must be brought to class on the day the assignment is due and deposited in the homework box in the front of the classroom within the first 5 minutes of class
- a TA will come to class and collect the box at 1.15pm
- if your hardcopy does not make it into the box, you will lose points
- if you attempt to bribe the TA, you will receive 0 for that assignment
- if you must miss class, have a friend deposit your hardcopy in the box
- exceptions and extensions are possible, primarily based on **MEDICAL EMERGENCIES**
 - circumstances must be documented and suitable arrangements will be made — you must consult me via email on an individual basis

homeworks: regrade policy.

- if you feel that there was an error in grading your homework or quiz, then you need to write on a piece of paper a description of the error
- STAPLE the paper to your homework or exam and leave it with me to be regraded
- know that the TAs are given a list of expectations for each homework assignment and quiz and told where to take off points — so if your complaint is that too many points were taken off for one kind of mistake or another in your program, then generally those types of things will not change in a regrade
- if there is a genuine error in the marking, like we thought something was missing, but it is really there, then you will likely get points restored
- HOWEVER, a regrade means that the entire assignment or quiz will be remarked, so be aware that your mark can go DOWN as well as UP
- regrades take a while to process, so be patient — if you need the work to study from, then make a copy of it before you turn it in for a regrade

homeworks: a word to the wise.

- save early and save often!
- disk drives crash
- floppies have bad sectors
- power supplies fail
- monitors die
- mice get trapped
- SO back up in several places
- paper print-outs are the best security known to mankind

a word about lectures.

- brief notes for every lecture will be placed on the syllabus section of the class web page
- **BUT THEY ARE NOT A SUBSTITUTE FOR COMING TO CLASS**
- I know, I used to skip classes too
- If you must miss a class, **YOU** are responsible for getting notes from someone who did come to class
- I will try to post lecture notes on the web before class, **BUT:**
 - I strongly encourage you to take notes yourself because you learn better when you actually write things down
 - everything I say is **NOT** in the lecture notes, although anything I say **MIGHT** be on a quiz or in a homework, so you need to take notes on what I **SAY**
 - sometimes there are mistakes in the lecture notes which get caught and corrected during class

a word about quizzes.

- are the only way I know you are doing your own work
- are the only way YOU know you are doing your own work
- are not hard if you really know the material
- count for 25% of your term mark

a word about feedback.

- homeworks and quizzes let me know how you are doing
- and in a way, they let me know how I am doing, as a reflection of how you are doing
- but, I welcome feedback from you
- email, anonymous written notes, etc.

a word about academic integrity.

- the work you submit for assessment should be completed **ON YOUR OWN**
- you may get help from TAs, me, friends
- **BUT YOU MUST ACKNOWLEDGE ALL HELP GIVEN**
- you should not mail code or copy files
- if someone asks you to do this, *JUST SAY NO!*
- *This is NOT a group project class — so if you seem to be getting too much help, you will be contacted by me and/or a TA.*

topics covered.

as much as we can take of the following:

- software development life cycle
- C (from Java)
- configuration management
- shell scripts
- UNIX tools
- debugging, tracing and profiling
- software development models
- processes, threads and sockets
- make, automake and autoconf
- perl
- software design methodologies
- multi-language programming

- C++ (from Java and C)
- UML, data flow diagrams, requirements specifications, systems analysis
- software documentation, user documentation
- Internet programming (HTML forms, CGI, Javascript, PHP, MySQL, applets, servlets)
- data interchange, XML
- Tcl/Tk, python
- UNIX software package and installation tools (tar, gzip, rpm)

phew!

so, let's get started...

- you are now the newest employees of **EduGameCo**
- you have all been hired to write an educational game
- you will spend the whole semester defining and refining the game
- as you become more knowledgeable, the game will become more sophisticated
... *(or at least that's my intention)*
- you will work for a customer ... *(besides me)*
for example:
 - a younger sibling
 - a little cousin
 - someone you babysit for
 - your computer illiterate roommate
 - a schoolteacher you know
- you will need to keep track of how much time you spend on various tasks (like designing, programming, documentation)

to do.

- get a CS account (if you don't already have one):
apply at <https://www.cs.columbia.edu/~crf/accounts/cs.html>
(note that the account costs \$50)
- find a customer
- check out the class web page:
<http://www.columbia.edu/~cs3157>

about me.

- undergrad: Barnard, CS major, class of 1985
- 10 years of industry experience working as a scientific and business programmer
- grad school: Brandeis University, PhD 2000
- previous teaching:
 - Monash University, Melbourne, Australia
 - University of Melbourne, Melbourne, Australia
 - Boston College, Massachusetts
 - came to Columbia in Fall 2001
- research interests center around educational technologies:
 - robotics — RoboCup and RoboCupJunior
 - Internet communities
 - software agents
 - artificial intelligence — evolutionary computation

about you.

- please take out a piece of paper and write down...
 1. your name
 2. your class and major OR if you are a non-matriculating student, categorize yourself
 3. the CS courses you have taken so far
 4. why you are taking this course
 5. what you hope to get out of this course
 6. one sentence about one wonderful thing you did over the break
- ...and give it to me before you leave