

# CS530

# Security Systems

Bill Cheng

*<http://merlot.usc.edu/cs530-s10>*

# Today's Topics

- ➔ Placement Exams
  - ▬ Replaces the old Diagnostic Exam
  - ▬ See web site for details
  
- ➔ Administrative Stuff
  - ▬ The instructor *cannot* give D-clearance
  - ▬ If you would like a D-clearance, please use the on-line D-clearance system
  - ▬ I will waived CS 402 pre-requisite if class is not full
  
- ➔ Review Course Organization
  
- ➔ Review Topics
  
- ➔ HW1
  
- ➔ Introduction

## Class Structure

- ➔ **TuTh 9:30am - 10:50am in OHE 100D**
- ➔ **Instructor: Bill Cheng**
  - **Email: [bill.cheng@usc.edu](mailto:bill.cheng@usc.edu) (24 hour turn-around)**
  - **Office Hours: M/Tu/Th 2:00pm - 3:00pm or by appointments in SAL 228**
- ➔ **TA: Leslie Cheung**
  - **Email: [lccheung@usc.edu](mailto:lccheung@usc.edu) (24 hour turn-around)**
  - **Office Hours: (TBD)**
- ➔ **Grader: (TBD)**
  - **Email: (TBD) (24 hour turn-around)**
  - **Will hold office hours after grade notification**

## Class Resources



Class web page: <http://merlot.usc.edu/cs530-s10>

- ▬ Lecture notes posted here soon (hopefully) after class
- ▬ Homework assignments (programming)
- ▬ Reading list
- ▬ News section
- ▬ You should check this site regularly



Google group

- ▬ Student-to-student discussions about programming assignments
- ▬ Exchanging *ideas* are allowed
- ▬ Posting code is *not* allowed (short code segments to illustrate ideas are allowed; short means < 5 lines)
- ▬ Instructor & TA will also post answers to questions here
  - if appropriate for whole class



# Course Readings



## Textbooks, not required

- B. Schneier

  - *“Applied Cryptography: Protocols, Algorithms, and Source Code in C”*

  - may be out of print

- Matt Bishop

  - *“Computer Security: Art and Science”*



## Research Papers

- Available online

- About 15 papers

  - may add papers as we go along



## Lectures based on textbooks

- slides

- lectures should be interactive



## Grading

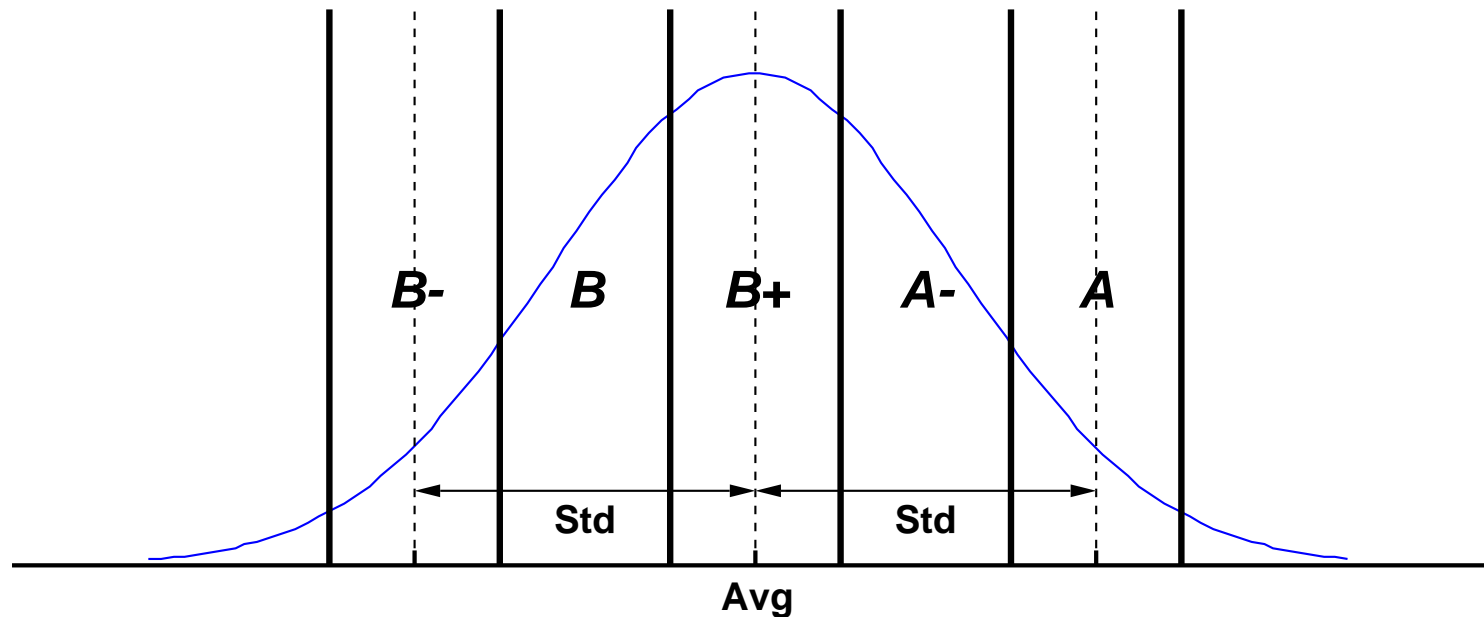
- ➡ **HW**      **30%**    3 to 4 assignments (some programming)
- ➡ **Lab**      **10%**    10 assignments (hands-on)
- ➡ **Paper**     **10%**    5-page *extended abstract*
- ➡ **Rowcall**    **3%**     starting with 4th week of classes
- ➡ **Midterm**   **22%**    in class, Thu, 3/4/2010 (firm)
- ➡ **Final**      **25%**    8:00am - 10:00am, Tue, 5/11/2010 (firm)
- ➡ **No extra credit**
  - ➡ Try your best from the beginning
- ➡ **HWs graded by the grader, term paper proposal approved by the TA, term paper and exams graded by the instructor**

## Grading (cont...)



Final grade assigned by the instructor

- On a curve, class average is probably a B+
- C's will likely be given, F's if necessary
- Loose guideline depicted below:



## Grading (cont...)



### Fairness

- ⇒ Without fairness, grades have little meaning
- ⇒ The instructor ***must treat all students equally*** and cannot give special treatment to any particular student
- ⇒ Therefore, please do not ask special favors from the instructor because of your circumstances (except for ones that are explicitly allowed by the university)
- ⇒ This may seem unfair to you because you believe that your circumstances are special (understandably, everyone does)
- ⇒ But the rule the instructor must follow is that ***whatever he offers you, he must offer to the entire class***





# Sign Row Sheet



For ***on-campus*** students only

- If you are enrolled in the DEN section, you are not required to sign row sheets
- DEN students normally have a slight disadvantage that they can miss stuffs happening in the class
  - this is served as an *"equalizer"*



Starting from ***week 4***, each lecture is worth 1 point

- You should sign the row sheet as soon as you get into class
- If you come in between 9:41am and 10:00am, check ***late*** box
- If your signature is on the row sheet, you get the 1 point
  - provided that you do not leave before class ends
- If you have to leave before class ends, please e-mail me to have your signature removed or to get only half a point
- If you are sick or have a family emergency, please bring a note from a doctor to receive credit



# HW Assignments



## HW

- ⇒ Small programming assignments
  - OpenSSL
  - C/C++ only
  - must compile and run on *nunki.usc.edu*
  - Makefile - `make` must work as is
  - many requirements, please see specifications
  - Electronic submission - gzipped tar of your source and documentation files
- ⇒ Must be done *individually*
- ⇒ You need to learn to be *very precise*
  - know *every bit* that you are reading and writing
  - know exactly what each function is doing and the meaning of all its *return codes*

## HW Assignments (Cont...)

- ➔ Grading of HW assignments will be *harsh*
- ➔ *Grading guidelines* will be posted one week before assignment due date
  - you do not get credit for simply coding, you get credit for making sure your code works according to spec
- ➔ We can only grade from our *grading account on nunki*
  - test your code from someone else's account
  - you are expected to check the running of your code against the grading guidelines
  - you should score *perfectly* since you know exactly how we will grade
- ➔ *Do* expect "double jeopardy"

# Termpaper



## Termpaper

- E-mail *proposal* by deadline
  - to get your 3 references approved
    - ◆ strict requirements, please see the spec
  - to get some feedback from the TA
  - will lose **20%** of termpaper grade if miss deadline
- 5 page extended abstract
  - references may flow onto page 6
- You are welcome to start now
- Acceptable formats are PDF and HTML
  - proprietary formats such as MS-Word or human-unreadable formats such as LaTeX source will be rejected
- Must be done *individually*

# Lab

- ➡ **Lab lectures: Fri 4:00pm - 4:50pm in RTH 105**
  - **make sure you attend the first lecture for administrative information**
  
- ➡ **Lab TA: David Morgan**
  - **Email: davidmor@usc.edu**
  
- ➡ **Lab Grader: Ranjeet Sangle <sangle@usc.edu>**
  
- ➡ **There will be 10 lab assignments**
  - **each lab is worth 1 point (pass/fail)**
  - **you must complete 8 out of 10 labs**
  - **the only possible total scores for the lab are 0, 8, 9, and 10**
  
- ➡ **Lab web page is at: <http://www-scf.usc.edu/~csci530/>**

## Assignment Submissions

- ➔ Use *bsubmit* and the *Bistro* system (see web page for details)
  - ➔ Very important: *read output of bsubmit*
  - ➔ Very important: *verify your submissions*
    - see the bottom of the **Electronic Submission Guidelines** web page for details
    - if you forget a file, you are not allowed to resubmit it after the deadline
  - ➔ **Please do not delete or alter anything in your `~/bistro` directory. If you must delete your `~/bistro` directory, you must tar then gzip the content of your `~/bistro` directory and e-mail the resulting `tgz` file to the instructor:**

```
cd; tar cvzf $(USER)-bistro.tgz .bistro
```

**Delete the directory only after you get an confirmation e-mail from the instructor (or at your own risk)**

## Late Policy

- ➡ **Electronically Submitted Assignments**
  - ➡ You can submit multiple times, only the last on-time submission will be graded (unless you send us e-mail)
  - ➡ 15 minutes grace period
  - ➡ 75% of your score if within one day late beyond grace period
  - ➡ Although in the first 50 minutes of this period, you will only lose 1% of your grade every 2 minutes
  - ➡ 0 otherwise
  - ➡ Time is based on *Bistro* server timestamp
  
- ➡ **Extension *only possible* if you have a *note from a doctor* or other form of official proof of family emergencies**
  - ➡ e.g., scheduling conflict with *work* will not be excused

## Modifications After Deadline



After the submission deadline has past

- ⇒ You are allowed up to 3 lines of free changes, submitted via e-mail to the instructor, within 24 hour of the project submission deadline
  - clearly, this is not meant for major changes
  - you may want to anticipate that your submission may not be exactly what you thought you had submitted
- ⇒ One line (128 characters max) of change is defined as one of the following:
  - *add* 1 line before (or after) line x
  - *delete* line x
  - *replace* line x by 1 line
- ⇒ Additional modifications at 3 points per line (same deadline)
- ⇒ (cont...)



## Modifications After Deadline (cont...)



After the submission deadline has past (cont...)

- ⇒ Afterwards, additional modifications cost **12 points per line** for the next 6 days
- ⇒ Afterwards, it costs **30 points per line**
- ⇒ Applies to source code, Makefile, and README files
  - do not forget to submit a file, **verify** your submission
- ⇒ Try things out before your first submission deadline to get familiar with the **Bistro** system
- ⇒ **Retest** your code after you have submitted

## Regrade Policy

- ➔ Grades will be sent to individuals via e-mail
  - ➔ You must register for the class mailing list
  
- ➔ Regrade requests in writing
  - ➔ Submit within 1 week of initial grade notification
    - must follow instruction in grade notification e-mail
  - ➔ Regrade can be done after the 1-week deadline, but you must *initiate* a regrade request within 1 week
  - ➔ We reserve the right to regrade the whole thing

# Scheduling Conflicts



## Midterm Exam

- scheduling conflict with midterm exam must be resolved with the instructor at least one week before the exam



## Final Exam

- scheduling conflict with final exam means
  - 1) you have another exam that overlaps in time with our final exam
  - 2) you have two or more other final exams on the same day
- if you only have another final exam on the same day is **not** considered a scheduling conflict
- scheduling conflict with **work** is **not** considered a scheduling conflict
- Documented illness will get an incomplete grade

## Academic Integrity Policy

- ➔ The USC Student Conduct Code *prohibits plagiarism*
- ➔ All work submitted for the class is to be *done individually*
  - ➔ Code fragments obtained from *public sources* (or code derived or adapted from them) must be *explicitly cited* to give credits
  - ➔ Code fragments obtained from *private sources (or previous semesters)* are *not allowed*
  - ➔ Code fragments done by yourself for other classes must be cited explicitly
  - ➔ For more details, please see the *Academic Integrity Policy* section on the *Course Description* web page

## Academic Integrity Policy (Cont...)

- ➔ You are encouraged to work with other students
  - ▬ "work with" does not mean "copy each other's work"
  - ▬ "work with" means discussing and solving problems together
    - this should happen at a *high level*
  - ▬ but be very careful when it's time to write code
    - must write code completely on your own
    - do not write code together
  
- ➔ If you cannot work together at a high level
  - ▬ you are advised not work together with other students

# Program Checker

- ➡ Do not submit someone else's code
- ➡ How do we catch cheaters?
  - We use MOSS to analyze your submissions
    - <http://theory.stanford.edu/~aiken/moss/>
  - Analyzes code structure intelligently
  - We also have *all* projects from several previous semesters

## Student Commitments

- ➔ Keep up with your reading
  - ▬ Complete relevant reading before class
  - ▬ Browse lecture slides before class
    - lecture slides will be available on-line before class
- ➔ Do your own work
- ➔ Turn in assignments on time
- ➔ Ensure gradable assignments
  - ▬ Programs must work on `nunki.usc.edu`
- ➔ You are encouraged to study with other students and *discuss* (no sharing) programming assignments
- ➔ You are encouraged to ask questions, pretty much about anything related to programming

## Student Commitments (Cont...)

- ➡ If you feel that you are falling behind
  - Talk to the instructor as soon as possible
  
- ➡ When you get stuck with programming
  - Ask the TA or the instructor for help
  - Don't wait too long
  
- ➡ Please do not ask these questions in e-mails:
  - Here is my understanding of X. Am I right? Is this correct?
    - find a different way to ask
  - I don't understand X. Could you explain X to me?
    - if you attended lectures, you can ask this during office hours
  - Here is what I am thinking of or doing... is it acceptable (or is this okay)?
    - can you ask this during exams?



# Study for Exams

- ➔ Exams mostly are based on lectures
  - Although I reserve the right to ask anything from required reading
  
- ➔ Exam questions are often of the form "in N words or less, please give the *best* answer for the following question"
  - you must choose your answer and put it at the beginning of your answer
  - generic answer usually gets you very little partial credit
  - better answer may get you more points
  
- ➔ Do not review all lectures only right before the exams
  - otherwise, you may only be able to give generic answers because everything is a blur
  - you need to show that you know the difference between answers of different quality

## Things to Do *Today*

- ➔ Read class web page: <http://merlot.usc.edu/cs530-s10>
  - ▬ Check course description and reading list
- ➔ Register yourself from the class home page to get on the *class mailing list*
- ➔ Check HW1 spec and *start coding*

## Course Content Credit

- ➔ Slides and course content from:
  - ▬ Dr. Clifford Neuman
  - ▬ Dr. Brian Tung