ECS15: Introduction to Computers

Fall 2013
Patrice Koehl


When do we meet?

• **Class:**
  MWF 10:00-10:50 a.m; 1227 Haring;

• **Labs:**
  – A01 M 12:10 a.m.-3 p.m.; 2020 SLB
  – A02 F 3:10 p.m.-6:00 p.m.; 2020 SLB
  – A03 W 1:10 p.m.-4:00 p.m.; 2020 SLB
  – A04 F 2:10 p.m.-5 p.m.; 2020 SLB

Some Important Facts

• **Instructor:** Patrice Koehl
  http://koehllab.genomecenter.ucdavis.edu/

• **Instructor office hour:**
  – Monday 11:00 a.m.-12p.m. at 3106 Kemper Hall
  – Email: koehl@cs.ucdavis.edu (subject line: ECS 15)

• **TAs:** Darrel Aubrey and Sifat Ferdousi

• **Reader (for the term paper):** Lissa Miller

• **TA office hour and location**
  – same as the lab sessions
Course Material

- **Textbooks**

- **Class website:**
  - Check for notes
  - Check for announcements periodically.

Grading

- **Term paper (20%)**
  - Computer in an area of your interest

- **Lab assignments (35%)**
  - 9 small projects (basic computer skills, basic programming): we remove the lowest grade.
  - No homework

- **Midterm (20%)** (one mid-term)
  - Open book
  - In class

- **Final (25%)**
  - Open book

Some rules...

- All lab assignments require individual efforts. Discussions are allowed, no copying allowed.
- **Late policy**
  - Full credit if on time
  - 50% if within 24 hours
  - 25% if within 48 hours
  - 0 after 48 hours
- **Regrading Policy**
  - One week regrading period after grades returned to students
- **Incomplete will not be granted**
  - Unless proved emergency with filled emergency form
- **Academic Integrity**
  - Writing: we use commercial software to check for plagiarism
  - Lab assignments
How to get a good grade?

- **Computers are rational**
  - Understand, not memorize: this is why tests are open book
- **Active classroom participation**
- **Do your own assignments**
  - You will understand what you do!
- **Make sure you check the web site + notes + textbooks**
- **Midterm course review**
- **Final review**

What we will study

- **Computers (3-4 weeks)**
  - Hardware: motherboard, processor, memory, I/O devices, etc.
  - Software and application:
  - Graphics: image, video, 2D, 3D, game,
  - History and ethics
- **The Internet (2-3 weeks)**
  - Layered architecture
  - Applications: web, email, p2p, etc.
  - The path of your email/webpage.
  - LAN: local area network, wireless local area network.
  - Security
- **Python Programming (3-4 weeks)**
  - Getting started
  - Basic concepts: type, variable, I/O
  - Loops: while, for,
  - Conditionals: if

Why?

- **Basic knowledge of computers**
  - Order a computer online
  - Buy a digital camera
  - Configure your wireless router
- **Basic understanding of software and tools**
  - Word processing, etc.
- **Security and privacy**
- **Writing programs to solve your own problems**
Computers and You

- The computer is your "magic wand"
  - It can be your best friend
  - It may mean a lot of frustration
- It does exactly what you tell it to
- Your job is to figure out what/how to tell it!
- Learning the language is easy...

Laboratories

- Go to your registered Lab session if possible.
- Priority goes to students registered in the lab session
- TAs will be there the whole time to help you.
- Yes, you can go and ask any questions related to the class!
- Please let the TAs talk about the lab assignment first.
- Lab assignments are posted two weeks in advance
- All assignments are due on Friday 6pm, at my.ucdavis.edu
- Please make sure you submit correctly!
- Please check your grade and TA comments (if any).

Term paper

- 20% of the total grade
- ~2500 words (around 10 pages)
- A research paper on a topic related to computers that interest you
- An opportunity to learn how computers are used in an area you are interested in.
- Start early!
Timetable

• Prospectus due Friday, October 12
• Progress report due Friday, October 26
• Draft due Friday, November 9
• The paper itself is due Wednesday, Nov 28
• All due at 6pm

Possible Topics

• Computers in education
  – for teaching reading
  – for teaching music
• Computers in biology
  – bioinformatics
  – computational biology
• Computers in art, architecture, and design
  – computer-generated and computer-supported art
  – computer-aided design
• Digital libraries
  – legal issues (e.g., intellectual property)
  – technologies
• Music on the Internet
• Internet on entertainment
  – P2P file sharing
  – Video-on-demand
  – E-books

Possible Topics

• Social networking websites and their impacts
• Online advertising
  – Google?
• Security and privacy
• computer and/or Internet addiction
• failures regarding computers in schools
• famous computer viruses and "worms"
• Digital divide
Computer Science

- Theory of computation
- Software engineering
- Computer graphics
- Computer security and cryptography
- Computer networks
- Artificial intelligence
- Human-computer interface
- Bioinformatics
- System and architecture

(http://en.wikipedia.org/wiki/Accelerating_change)