ECS20: Discrete Mathematics for Computer Science

Information sheet
UC Davis – Patrice Koehl
September 21, 2016

**ECS20**

**Professor:** Patrice Koehl  
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**Office hours:** Wednesday: 10:00 am – 12:00 pm

**TAs:** Joshi Devika, Luhong Pan, and Yingying Wang  
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**TAs office hours:** Joshi Devika:, Kemper Hall 53  
Luhong Pan:, Kemper Hall 53  
Yingying Wang:, Kemper Hall 53

Check here for reading assignments, information about past and future lectures, problem sets, news,…

**Textbook:** no textbook required. You can check: *Discrete Mathematics and its Applications*, Rosen (any editions)

There is also a recommended online textbook; Procedure to access:
- Sign up at [http://zybooks.zyante.com](http://zybooks.zyante.com)
- Enter zyBook code UCDAVISECS20KoehlFall2016  
- Click Subscribe

Note that the cost to subscribe is $48.  

**Lectures:**  
You are expected to attend lecture, but I will not keep track of presence. You are responsible for the material discussed in class, and any announcements made in class.

There is no eating allowed during lectures.

**Homework:**  
There will be homework almost every week, usually due on **Wednesday evening at 5 pm**.

Collaboration is allowed. Keep in mind however that your goal in doing the homework problems is to learn how to do them yourself. Write up the homework solution by YOURSELF. This means that after reading, talking, and thinking, you write down the solution with your own word/style. Your goal is to demonstrate that you understand how to do the problem. PLEASE WRITE LEGIBLY!

Please hand the homework in **the box in Kemper Hall (2131)**. Homework will not be accepted in class, e-mail, or delivered in any way other than in the box.

Late homework will be accepted, but with a penalty (50% the first 24 hours, 75% between 24 and 48 hours, and 0 credit after 48 hours) Your lowest homework grade will be dropped, however, to cover one emergency that may come.

We may grade only a selection of the homework problems. If there are questions that are not graded, they will not be announced in advance,…

**Midterms/Exams:**  
There will be 2 midterms, which will be announced ahead of time.
There will be a final. The midterms and final will be open books, and open notes. You must attend the exams at the specified dates; there will be no make-up exams.

All exams are open-book, open notes.

**Re-grades:** We will not consider re-grading any homework, quiz or exam unless you bring the potential grading error to our attention within ONE week after the work has been returned to you.

**Grading:** 20% homework, 20% midterm 1, 25% midterm 2, 35% final

**Questions:** try to ask questions in person in lecture, discussion sessions or office hours. I have a tendency to procrastinate when it comes to answering e-mails.…

**Syllabus**

**Logic (3 lectures)**
Propositions; compound propositions; methods of proof; mistakes in proof; predicate and quantifiers

**Functions and algorithms (4 lectures)**
Set theory; functions: injection, surjection, bijection; growth of functions; Algorithm: definition; pseudo codes

**Number theory (5 lectures)**
Fundamental theorem of arithmetics; GCD, LCM, Bezout theorem. Division. Fermat’s little theorem.
Sequences.
Proof by induction; recursion

**Counting (6 lectures)**