University of Illinois at Urbana-Champaign  
Dept. of Electrical and Computer Engineering  

ECE 220: Computer Systems & Programming  

Introduction and Overview  
Fall 2020  

Digital Systems are Comprised of Seven Layers  

The colors indicate the typical basis for each layer  
- human language / theory  
- software  
- digital hardware  

(figures based on Patt & Patel Ch. 1)  

Our Class Builds Upwards from ECE120  
Your future work!  
Future classes (CS374)  
ECE220 is here!  
In ECE120, you learned to build a computer from bits and gates.  

What is ECE220?  
- Teach a systems perspective that includes both hardware and software (and math!)  
- ECE culture and goals  
- Expectations of engineers  
- Lifelong learning necessary  
- Understand and identify tradeoffs  
- International group—leverage it!  
- Academic reality and grade philosophy
Opportunities for International Connections

- talk to your professors here
- go to office hours
- ask questions (class has priority, but anything is ok to ask)
- travel to UIUC next year!
- CEs in Fall (take 391)
- EEs in Spring (attend EOH)
- make friends, work together
- meet faculty and graduate students

ECE220 Honors Section (this lecture)

You’re all good students.
Slides and assignments are based on my honors section at UIUC.

*All individual work.*
(No partners for MPs.)

Where to Find Information

Start with the web page!

One way: remember this link

http://lumetta.web.engr.illinois.edu/220-F20/

Another way:
- type “Steve Lumetta” into Google
- Follow link to 220 F20 page under “Classes”
Read Web Page and Piazza Every Day

On the web page:
- announcements from course staff
- course information and timing
- assignments, exams, and due dates
- reference materials

On Piazza (get access code from a TA):
- ask any non-personal questions here
- do not post answers

Workload Includes Machine Problems

Machine Problems (MPs) every week
- programming assignments
- usually due Saturdays at 11:59:59 p.m.
- submit via Git (using UIUC Net ID)
- feedback tool will try to help you, but you are responsible for testing!

FIRST MP: SATURDAY 26 SEPTEMBER

Workload Also Includes Exams

Two midterms
- each designed to take 1.5 hours
  for an average student
- Thursday 29 October, 6:30-9:30 p.m.
- Thursday 3 December, 6:30-9:30 p.m.
- [ Tried to coordinate with MATH 213, MATH 241, and PHYS 212 instructors.]

Final exam: TBD
Locations: TBD

And Workload Includes Labs

In discussion section, you will...
- solve programming problems
- related to concepts from lecture
- and somewhat relevant to your MPs.
### How Will We Grade?

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>MPs</td>
<td>30%</td>
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<tr>
<td>Midterm #1</td>
<td>20%</td>
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<tr>
<td>Midterm #2</td>
<td>20%</td>
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<tr>
<td>Final</td>
<td>30%</td>
</tr>
<tr>
<td>Labs</td>
<td>0% (skip at your own peril)</td>
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**Late Policy for MPs:** -2 pts per hour or fraction thereof. We will grade ONLY your last submission.

### Get to Know Your Fellow Students

Say “hi” to the person next to you in lecture, discussion, the canteen, the movie theater. Go ahead, try it now. Really!

**Remember that important skill when you arrive at UIUC!**

### Don’t Cheat!

See **Section 1-402 of the UIUC Academic code**.

In all assignments and exams in our class, **work must be your own**.

It’s ok to talk and help each other understand, but it’s not ok to give/share/lend/copy/allow someone to copy code/answers.

### Your Guide to the Slides

The title gives the main point. **Definitions** and **key messages** in bold blue. **Parameters** and **variables** in bold green. Other colors used on a per-slide basis.