# Digital Systems are Comprised of Seven Layers

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

(figure based on Patt & Patel Ch. 1)

<table>
<thead>
<tr>
<th>Problems/Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithms</td>
</tr>
<tr>
<td>Computer Language</td>
</tr>
<tr>
<td>Machine/Instruction Set Architecture (ISA)</td>
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<tr>
<td>Microarchitecture</td>
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<tr>
<td>Circuits</td>
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<td>Devices</td>
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# 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.

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# 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!
- CE in Fall (take 391)
- EE 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 section at UIUC.

All individual work.
(No partners for MPs.)

Our Staff

Prof. Steve Lumetta (lumetta@illinois.edu)
Office Hours: TBD; probably in library café

Yan Cui (cuiy@zju.edu.cn, 159-8815-8055)
(will set up WeChat group today, too)

Where to Find Information

Start with the web page!

One way: remember this link
http://lumetta.web.engr.illinois.edu/220-F18/

Another way:
- type “Steve Lumetta” into Google
- Follow link to 220 F18 page under “Classes”
Read Web Page and Blackboard/WeChat Every Day

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

On Blackboard/WeChat:
- 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 SVN (Subversion)
- feedback tool will try to help you, but you are responsible for testing!

FIRST MP: SATURDAY 22 SEPTEMBER

Workload Also Includes Exams

Two midterms
- each designed to take 1.5 hours
  for an average student
- Thursday 18 October, 7:00-10:00 p.m.
- Thursday 29 November, 7:00-10:00 p.m.

Final exam: TBD

Locations: TBD

Let Us Know About Conflicts Early

University has clear rules for conflicts (online)
- Midterms: Section 3-202 of Student Code
- Finals: Section 3-201 of Student Code

Finals rules
- depend on class sizes;
- if you can’t tell, ask Jamie Smith in advising.

If you have a conflict, let us know early!
(at least one week before the exam)
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?

- MPs 30%
- Midterm #1 20%
- Midterm #2 20%
- Final 30%
- Labs 0% (skip at your own peril)

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.