EEL 3701 Exam 2 (in Honorlock)

Final Exam:
• **REMOTE**
• Sat, 27 Apr
• 3:00pm
• Honorlock
• w/ Zoom

Read the
Honorlock Rules & Polices
on our website's
Exams page

- 115 minutes (plus 5 minutes for setup).
- Questions require **understanding**
- Questions deal with "**real stuff**"
- Relevant topics include:
  - > All class material ($\rightarrow$Lecture 24 +)
  - > All Labs ($\rightarrow$ Lab 7)
  - > All Homework ($\rightarrow$ HW 12)
- Study suggestions
  - > Labs
  - > HW (especially HW 12)
  - > Exams 1
  - > Class Notes
  - > Practice Exams

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- Mixed-logic (direct-polarity indication)
- Truth Tables/Boolean Algebra/K-maps
  - > CSOP, CPOS, MSOP, MPOS
- Number systems, arithmetic
- SSI elements and circuits
- MSI elements and circuits
  - > MUX, DeMUX, Decoder, Encoder
  - > Tri-state buffer, Open collector, etc.
  - > Half adder, Full adder, Subtractor, Comparator
  - > Static IC characteristics: Fanout, Noise Margin
- LSI elements: PAL, PLA, ROM, RAM
- VLSI elements: PLDs, CPLDs (Altera MAX 3064 & V)
- Memory (latches, FFs, RAM, ROM), Memory Expansion

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Exam 2 Topics

- Quartus
- Timing Diagrams
- VHDL
- State machines
  - \> Flip-flops: S-R, T, D, J-K, etc.
  - \> Counters, sequence detectors
  - \> Asynchronous versus synchronous; Mealy/Moore
  - \> ASM charts (sync/async outputs)
    - – Implementation with and without ROM
    - – Implementation with D-FF's and other FF's

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Exam 2 Topics

- GCPU and other microprocessors and CPUs
  - \> Lab 6 and Lab 7
  - \> Programmer's Model
  - \> Addressing Modes / Effective Address
  - \> Hand-assembly
  - \> Programming and Timing
  - \> Architecture
  - \> Adding new instructions (hardware and software)

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Exam 2 **Approximate** Point Distributions

- Combinatorial circuits: 10-20%
- State machines: 25-35%
- Microprocessors: 45-55%
- Other: 0-20%

EEL 3701   Zoom for Questions During Exam

- Prior to opening Honorlock, connect to our **normal** lecture Zoom link.
  - > Before going to the Zoom link, login to UF's Zoom, https://ufl.zoom.us/. Use your **FULL** name.
  - > Be sure your speaker is <u>on</u> & video <u>off</u>.
- Do not attempt to chat with your classmates.
- If you have a question, "raise your hand".

Reactions

  - > In new Zoom, select *Reactions* and then *Raise Hand*.
  - > Shortcut for *Raise Hand*
    - – For Windows, select *Alt-Y*; for Mac, select *Option-Y*.
  - > Dr. Schwartz or one of the PIs will initiate a *private chat*.
  - > Be patient; there may be several students before you.
  - > When Dr. Schwartz or a PI start the chat, immediately specify the question number, part, paragraph number, and sentence number.
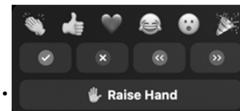
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Losing Internet Connection

- If you ever have WiFi or other internet connection problems just before or when your practical begins, use your **phone** to connect to Zoom.
  - >Zoom chat with the relevant PI.
    - Describe the issue and continue to try to get back in!
    - The PI will contact Dr. Schwartz.
  - >**As an emergency backup (if you internet goes out), you should learn how to setup your phone as a WiFi hotspot.**

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Honorlock Problems

- If you are having problems with Honorlock, contact Honorlock and keep trying!
- Also send a Zoom chat message to the PI.
  - >The PI will contact Dr. Schwartz.

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EEL 3701 Honorlock Room Scan, **if Requested**

- The room scan should be thorough and take about one minute. See Honorlock: Proper Room Scan (on the front page of our website).
  - > Be sure to how your desk, computer monitor, walls, floor near your computer, and ceiling.
- In addition to the complete room scan, show each of the following:
  - > Both sides of scratch paper
  - > Your breadboard (containing nothing not allowed)

EEL 3701 Honorlock ID Scan Extras

- After your Honorlock ID scan, show the following to your camera.
  - > Both sides of all sheets of your scratch paper.
  - > Also show your breadboard (containing nothing not allowed).
- You will scan and submit images of this paper with CamScanner or equivalent as specified later in this document.

EEL 3701 Paper Submission at End of Exam

- **PRIOR** to the exam
  - >Install a cloud storage app on your phone **and** computer
    – Examples: DropBox, OneDrive, Google Drive, iCloud
  - >Use of MS-Word (or similar) and email is **NOT** allowed.
- No phone connection to your computer is allowed.
- No printer/scanner is allowed.
- Be sure to **view** the file on your phone **before** submission to assure that it is **complete and clear**.
- Bring **10** completely blank piece of paper and pens/pencils.

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EEL 3701 Honorlock Room Scan, **if Requested**

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  - >Be sure to how your desk, computer monitor, walls, floor near your computer, and ceiling.
- In addition to the complete room scan, show each of the following:
  - >Both sides of scratch paper
  - >Your breadboard (containing nothing not allowed)

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EEL 3701   Honorlock ID Scan Extras

- After your Honorlock ID scan, show the following to your camera.
  - >Both sides of your scratch paper.
  - >Your breadboard (containing nothing not allowed).
- You will scan and submit images of this paper with CamScanner or equivalent as specified later in this document.

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Losing Internet Connection

- If you ever have WiFi or other internet connection problems just before or when your exam begins, use your **phone** to connect to Zoom.
  - >"Raise your hand" and then Zoom chat with a PI.
    - – Describe the issue and continue to try to get back in!
    - – The PI will contact Dr. Schwartz.
  - >**As an emergency backup (if your internet goes out), you should learn how to setup your phone as a WiFi hotspot.**

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Honorlock Problems

- If you are having problems with Honorlock, contact Honorlock and keep trying!
- Also send a Zoom chat message to the PI.
  > The PI will contact Dr. Schwartz

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Time Remaining

- Keep you speakers on so that you can hear any announcement that I make.
- I will **VERBALLY** tell you when 5 minutes are remaining (and also a few other times, like 37 minutes and 10 minutes remaining).

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Scratch Paper and Scans

- During the exam, clearly write the problem number for each of the problems on your scratch pages. Also write the scratch paper page numbers on these pages.
- Only after you are completed the rest of the exam (or when 5 minutes are remaining), do the following.
    - \> After picking up your phone, **no more writing/work** is allowed!
    - \> Scan the scratch pages that you used.
        - First put the pages in order of the problem numbers.
        - Pages not scanned will not be graded!
    - \> Be sure to view the file on your phone before submission to assure that it is **complete and clear**.
    - \> Place your scan in the chosen cloud storage folder.
    - \> From your computer, upload your scan as requested from your cloud storage folder to your Canvas/Honorlock exam.

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EEL 3701 Immediately Prior to the Exam

- Below has been shown to prevent problems that have happened to a few students in the past. It wouldn't hurt and could save some aggravation.
    - \>Verify that you have your UF ID, passport, or driver's license (for the Honorlock scan).
    - \>Clear your cache in Chrome.
        - Reinstall the Chrome Honorlock Extension.
        - Close then reopen Chrome.
    - \>Verify that you have the files that you need (and are allowed) available from your desktop.
    - \>Reboot your computer.
- Be sure that there is enough light for your face to be clear during the exam (for Honorlock). If not, find a lamp or a different area.

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EEL 3701   Honorlock ID Scan Extras

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  - \>Both sides of your scratch paper.
  - \>Your breadboard (containing nothing not allowed).
- You will scan and submit images of this paper with CamScanner or equivalent as specified later in this document.

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The End!

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