

Design of Digital Circuits

Extra Discussion Session

Prof. Onur Mutlu

ETH Zurich

Spring 2019

10 July 2019

Extra Discussion Session

Final Exam

Design of Digital Circuits (252-0028-00L)

ETH Zürich, Spring 2018

Prof. Onur Mutlu

Problem 1 (30 Points):	Potpourri	
Problem 2 (30 Points):	Verilog	
Problem 3 (15 Points):	Boolean Algebra	
Problem 4 (50 Points):	Finite State Machine	
Problem 5 (45 Points):	ISA and Microarchitecture	
Problem 6 (35 Points):	Pipelining	
Problem 7 (45 Points):	Out-of-order Execution	
Problem 8 (40 Points):	Vector Processing	
Problem 9 (45 Points):	GPUs and SIMD	
Problem 10 (40 Points):	Memory Hierarchy	
Problem 11 (35 Points):	Dataflow Meets Logic	
Problem 12 (BONUS: 40 Points):	Branch Prediction	
Total (450 (410 + 40 bonus) Points):		

Final Exam

August 23, 2019, 2pm

HIL G 41 & G 61

Preparing for the Final Exam

- 1. Study to **understand the material and concepts**. **Understanding is the most important thing we will test for**
- 2. Do the **optional homeworks** and understand them
- 3. Some questions on the exam will have similarity to optional homeworks and past exams. However, **some questions on the exam will be different from those in the past exams and homeworks**. Regardless, the questions will be designed to test your understanding of the material and the ability to think using that understanding
- 4. You can go over the lectures again to reinforce your understanding of the material. We would recommend this. As you know, **all lecture videos are available on Youtube** at <https://www.youtube.com/playlist?list=PL5Q2soXY2Zi8J58xLKBNFQFHRO3GrXxA9>
- 5. **All material** we covered in lectures and the labs **can be part of the exam**
- 6. We have made past **exams and their solutions available** online on the course webpage

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