Digital Electronics II 2010/11
(http://www.ee.ic.ac.uk/hp/staff/dmb/courses/dig2/dig2.htm)

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Lectures:  
Tue 16:00 Weeks 2-9 (12/10 – 30/11)  
Fri 14:00 Week 1 (9/10)  
Fri 17:00 Weeks 2-8 (15/10 – 26/11)

Problem Classes:  
Tue 15:00 Weeks 4 - 11 (26/10 – 14/12)  
Fri 16:00 Week 3 (22/10)  
You are strongly advised to attempt the indicated problems before attending the problem class.

Introduction

Week 1  
L1 Notation, Cause and Effect, Flipflops, Counters

Interfacing Digital Systems

Week 2  
L2 Synchronous bit-serial interfacing  
L3 Asynchronous bit-serial interfacing

Week 3  
L4 Microprocessor-to-memory interface  
Prob 1  
Problem Class: P1.1, P1.3, P1.5  
L5 Microprocessor-to-memory timing constraints  
Problem Class: P1.8

Synchronous State Machines

Week 4  
L6 Shift register control and sequencing  
L7 Data decoding with a counter  
Prob 2  
Problem Class: P2.2, P2.3, P2.4  
L8 Synchronous state machine analysis  
L9 Synchronous state machine design  
Problem Class: P2.7, P2.8, P2.12

Digital ↔ Analog Conversion

Week 5  
Prob 3  
Problem Class: P3.3, P3.5, P3.7  
L10 Digital-to-analog conversion  
L11 Analog-to-digital conversion: Flash and dither  
L12 Analog-to-digital conversion: Successive approximation

Addition Circuits

Week 6  
L13 Adders and propagation delays  
Prob 4  
Problem Class: P4.2, P4.5, P4.8  
L14 Fast adders: bit inversion & carry lookahead  
L15 Fast adders: carry skip and carry save

Week 7  
Prob 5  
Problem Class: P5.5, P5.6, P5.8

Week 8  
Prob 6  
Problem Class: P6.2, P6.8, P6.9

Week 9  
Prob ?  
Problem Class: ??