

Review for Final Exam on Thursday, May 9th 2019 at 2:30PM

A closed-book, closed-notes, no-calculators exam

EGR/CS 230 Microcomputer Architecture "Technology Fundamentals"

J Wunderlich PhD

Know whatever is indicated in parentheses ()

All of the following documents are in Dr. W's "COURSES" folder, in the folder for the course (And are also in your BOOKSTORE packet):

- [PACKET 0 BOOKSTORE COVER SYLLABUS](#) (Not on exam)
- [PACKET 1 BOOKSTORE powers of 10](#) (all but **precise** powers of two column)
- [PACKET 2 BOOKSTORE Chip Manufacturing Process](#) (all of first diagram)
- [PACKET 3 BOOKSTORE Atoms and transistors 2](#) (doping, and how each type transistor works)
- [PACKET 4 BOOKSTORE When will Moore's Law fail](#) (no calculations, But be able to write narrative about this)
- [PACKET 5 BOOKSTORE PAPER Reading Transistors Stop Shrinking](#) (Not on exam)
- [PACKET 6 BOOKSTORE TEXT CHAPTER Reading History CD1.10-P374493](#) (Not on exam)
- [PACKET 7 BOOKSTORE 2018 TECHNOLOGY History EconomicsPLUS](#) (all highlighted except company names)
- [PACKET 8 BOOKSTORE Conceptual Computer Architecture](#) (all)
- [PACKET 9 BOOKSTORE Levels of Computing, Micro Proc vs MicroController, rocots, IBM quality control](#) (slides 1,8,9,10,11,12,13,16,18,19)
- [PACKET 10 BOOKSTORE Microcontroller PAPER Highlighted 2](#) (all highlights except page 4)
- [PACKET 11 BOOKSTORE IBM Controlled Randomness PAPER](#) (not on exam)
- [PACKET 12 BOOKSTORE Cache Design 2](#) (List four types of Cache, Know Temporal & Spatial Locality of Reference, Cache Block/Line size rationale. Sketch & define SMP and MPP)
- [PACKET 13 BOOKSTORE Number Representations](#) (all)
- [PACKET 14 BOOKSTORE Fractional part of IEEE Floating Point](#) (all)
- [PACKET 15 BOOKSTORE IEEE Floating Point EXAMPLE](#) (all)
- [PACKET 16 BOOKSTORE How to design a PC Part 1](#) (all slides except 7,8,9,11,12,13,14,17,18,19,20,25,26)
- [PACKET 17 BOOKSTORE TEXTBOOK CHAPTER Reading RISC vs CISC, HLL vs Assembly CD2.20-P374493](#) (Not on exam)
- [PACKET 18 BOOKSTORE High Level Language vs Assembly Language 2](#) (3 advantages and 3 disadvantages of assembly)
- [PACKET 19 BOOKSTORE waves2](#) (all but last four questions on slide 10)
- [PACKET 20 BOOKSTORE Human Vision](#) (beta movement, And list 4 ways our eyes are different then a camera capture as stated on page 3)
- [PACKET 21 BOOKSTORE Understanding Color highlighted plus Displays IN COLOR](#) (all highlighted, RGB, and Compare with narrative and sketch CRT, LCD, plasma)
- [PACKET 22 BOOKSTORE TEXTBOOK CHAPTER Reading Graphics CDA](#) (Not on exam)
- [PACKET 23 BOOKSTORE GRAPHICS BOARDS 3](#) (slides 3,4,8)
- [PACKET 24 BOOKSTORE TEXTBOOK CHAPTER Reading Memory CD5.13-P374493](#) (Not on exam)
- [PACKET 25 BOOKSTORE TEXTBOOK CHAPTER Reading Storage CD6.14-P374493](#) (Not on exam)
- [PACKET 26 BOOKSTORE TEXTBOOK CHAPTER Reading Processors CD7.14-P374493](#) (Not on exam)
- [PACKET 27 BOOKSTORE Recent Intel microprocessors](#) (Not on exam)
- [PACKET 28 BOOKSTORE AMD ZEN CORE 2017](#) (Know all of "Neural Net Prediction" and "Smart Prefetch")
- [PACKET 29 BOOKSTORE AMDAHL2](#) (all)
- [PACKET 30 BOOKSTORE Reading Breaking Multicore Bottleneck](#) (explain AND graph how it relates to Amdahl's Law)
- [PACKET 31 BOOKSTORE Router](#) (difference between router and modem)
- [PACKET 32 BOOKSTORE clean power](#) (Not on exam)
- [PACKET 33 BOOKSTORE clean power more](#) (page 1: what a transformer and rectifier do. Page 7: list 6 things to consider about clean power)
- [PACKET 34 BOOKSTORE Symbolic AI vs Neural Networks](#) (explain difference between Symbolic AI and Neural Networks)
- [PACKET 35 BOOKSTORE, PAPERS Reading VR AR Virtual & Augmented Reality](#) (state one good, and one bad thing from each of these three papers)
- [PACKET 36 HANDOUT Reading PUBLICATION SUBMITPAPERdefininglimitsREVISED16b](#) (Not on exam)
- [PACKET 37 HANDOUT CogSci HCI Lecture 2018](#) (defend one technology that needs minimum regulation, and one that needs maximum regulation/limits, and why)