

## Updated 10/2/2017

**Review** - - - know the following! I make no claim/guarantee that the following review information is complete. Any material we covered or discussed in class is legitimate test material.

Introduction

**Chapter 3** Visual PC Read the chapter Pages 48-51

History: times of first computer, first commercial computer, first personnel computer. Know some programming languages. Identify external ports: DVI, USB (3 generations), RJ45-network port-ethernet, sound, HDMI, eSATA. Inside case Identify: RAM, power, bus expansion, Hard Drive, DVD ports /slots on mobo for CPU.

Bit, Byte, Kilobyte, megabyte, gigs, byte, terabyte. 1024 vs 1000, binary numbers, hexadecimal numbers. See page 92.

Know the purpose/function of an Operating System, know some early non-GUI ones, current ones, GUI vs command prompt

**Also chapter3 and "hands on"**

Windows 10, All material below is found in the chapter, but much of the chapter is out of date technology that we did not cover. We did this "hands on".

32 bit vs 64 bit OS, mainly know your way around windows 10, ~~System Root~~, Program Files vs Program Files X86, registry, ~~page file or swap file~~. Control Panel in particular: administrator tools, computer management, disk management, program and features, device manager, system, remote access, windows defender, firewall, and updates. Windows activation. Know what the registry is and the command regedit.

**Chapter 4** Microprocessors

Know address bus, data bus, CPU, RAM and their relationship or how they work together, best figure are actually in chapter 5 Fig. 5.3, 5.4 and 5.8 page 124, but also Fig. 4.17 and 4.18. Explained how RAM works, why is it called RAM. There have been several generations of CPUs due to technology improvements (This information can be found on pages 97-106), but the features I covered in class are the important ones and you should be able to answer questions about these features. These include Cache L1, L2, L3 (static RAM), cores, clock speed, cooling, socket or PGA/LGA. ~~Now we have APUs. Also know what GPU is.~~ Other terms: Manufacturing Tech, clock multiplier, overclocking, voltage for CPU, virtualization support, Front side bus, backside bus. Know features to look for when buying.

**Chapter 5** RAM Skipped a lot, read pages 128-139

Know what the Initials of SDRAM stand for, know the distinction between SDRAM and SRAM, how RAM works, latest is DDR3 or DDR4 SDRAM, cannot mix generations of RAM, Transfer data rate or speed important, measured in MHz or MB/sec. There is parity (or ECC) RAM and Buffered RAM for servers. Latency, SPD, SO-SDRAM. What is a page file or virtual RAM? Diagnostics, how do you know if bad? **End Test 1?**

**Chapter 6** BIOS and boot process All terms below can be found in the chapter. Read pages 158-162 and pages 175,181. Purpose of northbridge and southbridge, page 155.

What is BIOS? When and why used. CPU must have instruction loaded into RAM that allows CPU to communicate/work with each piece of hardware on PC. Know the boot sequence, Pages 177-178. Know about device drivers and registry and their function during boot process. Terms: CMOS, Flash BIOS, POST, Device Drivers. Why flash Bios, why update drivers? BIOS being replaced by Unified Extensible Firmware Interface or UEFI.

**Chapter 7** Motherboards Pages 190-205

Form Factor ATX,  $\mu$ ATX, ITX and proprietary. Video, NIC, Sound - built-ins vs not built-in. Chipset. Know features to look for: CPU Socket, Power connections, Number of SATAs, Ram Slots, Bus expansion slots, ports available and in particular number and generation of USBs.

Know the two current bus expansion slots: PCIx (older) and PCIe (not backward compatible) Pages 203-204. Adding expansion card and drivers pages 206-211.

Cases: tower, full tower, mid tower, minitower, cube. An ATX case can take a microATX mobo, it has standouts for both. Features to consider: Does PSU come with case?, front side ports USB and sound, number and type of bays, HD attachments

**Chapter 8** Powers Supplies

Know purpose of PSU. Know what features to look for: Wattage, Power connection, peripheral power connections, number of SATAs, form factor. Problems with PSUs.

What is a UPS, uninterruptible power supply?

**End test two**

There could be a few questions on the building of the PC and installing the software.

**Chapter 11** Hard Drives - Page330 - Read pages given below, understand the terms  
Read Intro Page. Recording done by polarizing small magnetic fields either a 1 or 0.  
Geometry section, CHS, tracks cylinders, heads, sectors, SSD, PATA, SATA – pages 331- 337 stop at ATA-1  
ESATA and SCSI - pages 347-348  
RAID, not all levels, but do know level 1mirroring – pages 351-355  
Installing SATA and SSD drives – pages 360–361 (middle)  
Auto detection page 362  
Troubleshooting- diagnostics software – pages 365- end  
Know features: capacity, rpms, transfer rate, connection.

**Chapter 12** - page 374 - Read pages given below, understand the terms  
Terms: Partition, Primary, Extended, MBR, Volumes, Partition Table, active partition, , Format, FDISK, CHKDISK, Error-checking, fragmentation, disk management, file systems, NTFS, MFT, bootable disk-  
Pages 375-383(middle), but skip dynamic disks. NTFS, mft, know how it works i.e. addressing memory location -pages 389-390  
Either read Formatting windows Vista (or7/8) or recall what we did during the build, disk management.  
Pages 391-398.  
Troubleshooting, pages 410-418

**Chapter 13** Optical Drives only i.e. CD, DVD and blue ray.

Default capacity, what R and RW means, burning, ISO. Pages 437-page 447(top)  
Cloning.

**Chapter 29** Pages 1119-1124 on Malware

Terms: Malware, spyware, virus, grayware, ransomware, phishing, cookies, spam, anti-virus and anti-malware software, signature or definition file, firewall. I did not distinguish types of viruses (Trojan, stealth or worm). How to protect your PC – good anti-virus always up to date, anti-malware, firewall on, do not accept unknowns. How to remove – run anti-\*?\* , try safe mode , live CD, restore point, etc.

**Chapter 21** LCD Monitors – Pages 769-776 (top), pixels, LCD, LED, relationship?

Video cards or Display adapters – pages 782-792, uses RAM memory.

Trouble shooting LCD monitors Pages 812-813. DirectX and dxdiag.

~~**Chapter 28** Printer overview, connections USB, wireless or network. Clean occasionally. Features to look for: type – laser, inkjet, impact, etc., speed, RAM, cost of ink/toner cartridges, quality of print or resolution.~~