# Course Description:

Intro to Microcomputers will introduce students to the working world of the microcomputers, which includes terminology and basic components generally found in current microcomputer products. Students will develop a familiarity with both the various types of hardware used and operating systems available in today's microcomputers. The hardware and operating systems will reflect those found in the office, home, labs and commercial workplace. Students will learn by microcomputer disassembly, component identification, reassembly and installation of various operating systems.

Materials needed:

1. Lab microcomputers (assigned by number), monitor, keyboard, mouse and various peripheral cards.
2. Basic tools phillips and flat blade screwdrivers, side cutters and needle nose pliers.
3. Various operating systems (Microsoft Windows 98, 2000, and Linux (current package version).
4. Lab workbench space (assigned by number)..
5. Tech Tips notebook (available in the lab).
6. Digital camera (checked out as needed for each lab).
7. Lab notebook.
8. Access to Open Office Draw desktop publishing application program.
9. Access to photo editing software such as Image Magic, StarOffice, Irfanview, Adobe Photoshop.

Prerequisites:

1. Introduction to Office Technology completed.
2. Introduction to Computers completed.
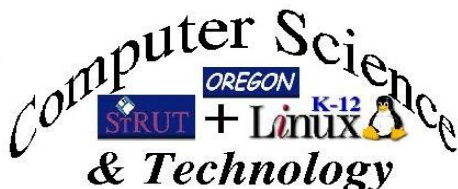
GENERAL INSTRUCTIONS

Students will complete the following documentation for each lab:

1. A lab notebook with handwritten notes (notes must be scanned and emailed upon lab completion or at the completion of Intro to Microcomputers).

2. A typed grammer and spell checked illustrated "How To" instruction manual. The manual will be created to documenting the Lab process.

The "How To" will contain:

1- Illustrations, graphics or photos (can be original -photo or drawn, or from the server library).

2-A parts list.   3- A table of contents.   4- A cover or title page.

5- A detailed instructional document in 2nd person explaining "how to" perform the the tasks completed in each lab. (Assume audience has no previous knowledge of any technology.)

Master Task List

Cklst ✔	TASK Number	Description	Instructor Init.
	Task #1	Complete online learning assignments at www.howstuffworks.com.	
		(See included instructions for:)	
		1 - How PCs Work	
		2 - How Motherboards Work	
		3 - How IDE Controllers Work	
		4 - How Hard Disks Work	
	Task #3	Complete PC Lab. (Use included task list.)	
	Task #4	Make a cat5 network cable and network your computer with the lab	
		server in a peer to peer network using your PC completed in Lab #1.	
	Task #5	Write illustrated "How To" document using notes, pictures and graphics.	

Rules & Requirements

1. If you are working on Labs   oworking as an aide you are required to be in the lab the full 3 hours on Wednesday(s).

2. Do not throw anything in the lab.

3. Clean up your work area when leaving your work area.

4. Labs   disassemble / reassemble, software installation, notes and parts list should be completed in approximately 18 lab hours.
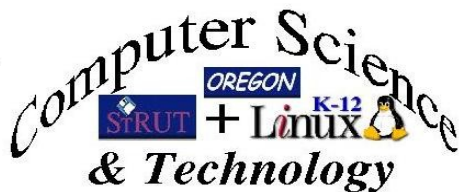
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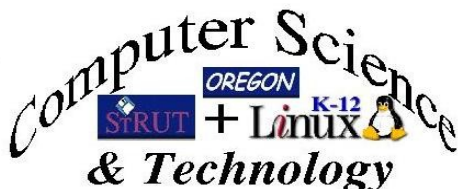Date..:_____

Instructor: _____

How Stuff Works Assignments

Complete the following assignments at http://computer.howstuffworks.com.

#1.Locate the content for **-> Hardware ->** *more* **-> How PCs Work**. Read the online material. Type a summary, grammer & spell check your work describing what a PC does and list or include at least eight (8) technical attributes or functions of the PC..

#2. Locate the content for **-> Hardware ->** *more* **-> How Motherboards Work**. Read the online material. Type a summary, grammer & spell check your work describing what the motherboard does and list   or include at least eight (8) technical attributes or functions of the motherboard.

#3. Locate the content for **-> Hardware ->** *more* **-> How IDE Controllers Work**. Read the online material. Type   a summary, grammer & spell check your work describing what the IDE controller does and list or include at least eight (8) technical attributes or functions of the controller.

#4. Locate the content for **-> Hardware ->** *more* **-> How Hard Disks Work**. Read the online material. Type   a summary, grammer & spell check your work describing what the hard disk does and list or include at least eight (8) technical attributes or functions of the hard disk.

Intro to Microcomputers
Lab

Cklst	Task	Lab #1 Description	Instructor Init.
✓			
	#1	TYPE your name in very large BOLD letters on 2 sheets of paper.	
	#2	REQUEST a lab computer kit from a staff member:	
		1- Select a monitor and select a workbench site.	
		2- Tape papers from #1 with your name on 1 side and 1 end of the lab box.	
	#3	CONNECT keyboard, mouse, monitor and AC cord to the computer.	
	#4	Turn on the power and TEST the computer you have selected to determine	
		it's working status and record the status in your notes.	
	#5	Disassemble computer into its component parts.	
		Identify and label all components with masking tape.	
		(*Write down all details of the process in your notebook.*)	
	#6	IDENTIFY and list all components on the included parts list worksheet.	
		(Create a graphic drawing or photo for each component.)	
	#7	Reassemble all components into the Lab computer. Add a network adapter	
		and or a sound card and speakers, if those components are missing	
		from your PC.	
	#8	Build a Cat5 RJ45 network cable. (See instructor for instructions.)	
	#9	Install completely the ms Windows XP operating system on the hard drive.	
	#10	Load the Linux operating system using default parameters or options as specified	
		by your instructor.	
	#11	Install the ms Windows 2000 operating system on the hard drive.	
		1. Checkout Windows 2000 CD from staff member.	
		2. Boot computer from CD-ROM and follow on screen default prompts.	
		3. Load system drivers if required.	
		4. Check the system control panel for any hardware issues.	
		5. Connect PC to the network with the network cable you constructed.	
		6. Using the default browser:	
		#1-Add your proxy server, #2-Connect to www.careertech.us	
		7. Play an audio CD through a connected speaker system.	
	#12	Complete required paperwork for this lab.	
		#1- Type your detailed notes, parts list, and "How Stuff Works" assignment.	
		(Parts Form available in the forms folder on the Library server.)	
		#2- Turn in notes and parts list (typed and handwritten), and "How Stuff Works"	

Computer Science
OREGON K-12
StRUT + Linux
& Technology

Intro to Microcomputers
## "How to"
Checklist Review

✓ **REVIEW**

___ Are all illustrations labeled?
___ Is an illustrated, detailed parts list included?
___ Is the illustration for the keyboard, mouse and monitor connection detailed?
___ Are there referenced illustrations or graphics for:
___ ...1. Removal and replacement of the case covers?
___ ...2. Removal and replacement of the CPU in its socket?
___ ...3. Removal and replacement of the floppy, CD and hard drives?
___ ...4. Removal and replacement of all cables?
___ ...5. Removal and replacement of RAM memory?
___ ...6. Removal and replacement of the power supply?
___ ...7. Removal and replacement of the pci/isa bus peripheral interface card?
___ Are there instructions for adding a network or sound card?
___ Are there instructions for locating and adding missing interface card drivers?

Power supply removal screws

SAMPLE!
Illustration!

example with arrows,
figure number and
connector or part labeled.

Mouse cable
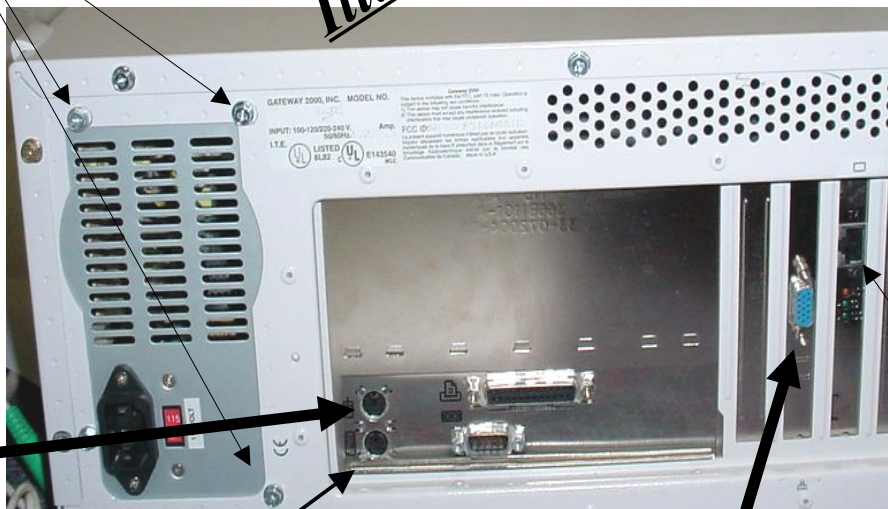
Keyboard cable

Figure #1

Monitor cable

Network cable

Lincoln City
Career Tech
Lincoln City, OR 97367
(541) 996- 5534

Parts List

Log (list) all components in your microcomputer. Use "Tek Tips" notebook, staff help, etc to identify and detail components disassembled.

Please log component ID(s) for all components as the ID information will be required when installing operating systems.

This list will be typed and included in your "How To" manual.

Computer Identi

Manufacturer	Model	Serial Number

Ckd ✔	Component	Mfg	Model or Type	Qty and/or Size
	Case			
	Mouse			
	Keyboard			
	Hard drive (2.5 gig minimum)			
	Floppy drive			
	Mother board			
	Power supply			
	CD-ROM drive			
	RAM memory (64 meg minimum)			
	IDE cable			
	Floppy cable			
	Monitor (Resolution 1024x768)			
	CPU (200 mhz minimum speed)			
	CPU Fan			
	Monitor Cable			
	Win9x Boot Diskette			
	AC Power Cable			
	Power switch			
	Network Interface Card			