The guts of an IBM desktop PC circa 1995: cables carrying electrical current and those carrying data are both visible

revision history

techred home > CIT-115 master sequence

CIT-115 Master sequence | Fall 2019

Instructor Eric Darsow's implementation of this course sequence is offered at CCAC's West Hills Center in the Fall of 2019.

Course	Date	Wk.	Sess.	Session description	Module	Info tech objectives	Application fluency objectives
CIT-115	WED 4-SEP-19	1	1	Introduction to the course;	**What has changed, what has stayed the same?** CIT-115 Syllabus Fall 2019		
CIT-115	MON 9-SEP-19	2	1	Introduction to the course; Changes and remain	**Electricity vs. Electronics vs. Computers vs. Robots** **What makes something a system? Outlining major computer system components** Wk. 1 Module: Systems	TR.115.IT.1: Classify devices into the categories of: electrical, electronic, computer, robot and defend the classifications using the definition of each category TR.115.IT.2: Label a system diagram's core components and identify deficiencies in a given system diagram TR.115.IT.3: Design a system diagram for a non-computer system which includes labeled flows between labeled components CCAC.115.LO.1: Identify major motherboard components, characteristics of CPUs, and various types of memory CCAC.115.LT.3: System Unit components and characteristics (motherboard, CPU, data representation, memory, adapter cards, ports, buses, bays, power supply)	
CIT-115	WED 11-SEP-19		2	Exploring system component categories			
CIT-115	MON 16-SEP-19	3	1	Explore the fundamentals of processor units, I/O devices, and more.	**Categorizing and assembling computer system components** Week 2: Computer Dissection	CCAC.115.LO.2: Describe the types of expansion slots and adapter cards, the role of buses in a computer's processing speed, and the differences among various input/output ports CCAC.115.LO.3: Explain the characteristics of various input devices (pointing devices, digital cameras, scanners,	

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						biometric devices) and output devices (monitors, printers, speakers) **CCAC.115.LO.4:** Explain the characteristics of various storage devices (magnetic disks, optical disks, removable media, solid state).	
CIT-115	WED 18-SEP-19		2	Try your hand at debugging system failures during boot			
CIT-115	MON 23-SEP-19	4	1	Exploring computer spec changes through time and designing a spreadsheet to answer the questions: What, exactly, about computers has changed since 1983? What Has stayed the same? What are the bottlenecks in our benchmark years? Session audio recording: SP19 (Download by right clicking and selecting: "save link as...")	**Change and remain project** Week 3 Module: Change and remain Exercise 1: Computer characteristic comparison War Games (1983) and Jurassic Park (1993) Exercise 2: Traffic bottle neck diagramming Exercise 3: Organizing data in spreadsheets Exercise 4: Moore's law Exercise 5: Computer characteristic comparison Mission Impossible: Rogue Nation (2015) and Interstellar (~2060) Exercise 6: Spec change research and spreadsheet documentation	**CCAC.115.LT.1:** Categories of computers (personal, mobile, servers, mainframes, supercomputers, embedded) and examples of computer usage (SOHO, mobile, power user, enterprise) **CCAC.115.LT.4:** Input devices and characteristics (keyboard, pointing devices, voice input, digital cameras, scanners, game controllers) **CCAC.115.LT.5:** Output devices and characteristics (displays, printers, audio) **CCAC.115.LT.6:** Storage devices and characteristics (magnetic disks, optical disks, static-state, removable)	**TR.115.A.1:** Create a blank spreadsheet and populate cells with text and numeric data; edit cells; wrap text **TR.115.A.2:** Use formulas to compute metrics relating to computer hardware specification changes through time
CIT-115	WED 25-SEP-19		2	Class continued work on the computing power comparison spreadsheet by choosing anchor computer models and researching the specs Session Audio			
CIT-115	MON 30-SEP-19	5	1	Session Audio: SP19	**Computer timeline creation** Computing power timeline		**4.E.1:**
CIT-115	WED 2-OCT-19		2	Continue timeline work			
CIT-115	MON 7-OCT-19	6	1		**Operating system explorations** Operating Systems Operating systems mini-lab guides	**CCAC.115.LO.5:** Describe the functions of an operating system, how they control a network, how they administer security, various utilities, and the features of desktop and server Operating systems **CCAC.115.LO.5:** Describe the functions of an operating system, how they control a network, how they administer	**5.E.1:**

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						security, various utilities, and the features of desktop and server Operating systems CCAC.115.LT.: Operating Systems characteristics (boot process, resource management and sharing, utility programs) and types (stand-alone, network, embedded)	
CIT-115	WED 9-OCT-19		2				
CIT-115	MON 14-OCT-19	7	1	Begin tree modeling project 4-March Session Audio	**Complete mid-term grade cards** If you are absent today, please complete and email a grade proposal card to Eric. **Trees!** Real and Digital File Trees Shared drive of all trees	COMP.TREE.1: Create a digital model of a real photosynthetic tree by measuring and matching branch complexity and depth COMP.TREE.2: Populate a file tree with directory nodes and leaf nodes structured logically to arrange data elements centered around a common theme (such as hockey or makeup or politics) COMP.TREE.3: Enumerate and describe various use cases for tree-like data structures in operating systems, file systems, and computer science in general	
CIT-115	WED 16-OCT-19		2	Continue tree structure modeling Session Audio: SP19, 6-March-19			
CIT-115	MON 21-OCT-19	8	1		**Trees: Part 2: Searching and traversing** Real and Digital File Trees Shared drive of all trees	COMP.TREES.4: Model tree and list searching algorithms and design an experiment to compare the speed of each respective algorithm COMP.TREES.5: Describe a file system tree in terms of node types, node depth, and structure symmetry	
CIT-115	WED 23-OCT-19		2	Wrap up tree weeks			
CIT-115	MON 28-OCT-19	9	1	Initial building of our clip-board databases: designing table schemas	**Databases: Designs, features, & use cases** Databases Clipboard database project guide		8.E.1:
CIT-115	WED 30-OCT-19		2	Populating classroom resevation database tables with real data			
CIT-115	MON 4-NOV-19	10	1	Constructing classroom reservation database in Libre Office Base with HSQL & beginning design of custom database		CCAC.115.LO.8: Describe the advantages of a database approach and their various characteristics (relational, object-oriented, multi-dimensional). CCAC.115.LT.9: Database characteristics (data hierarchy, types of databases, administration)	9.E.1:
CIT-115	WED 6-NOV-19		2	Building custom database in Libre Base			
CIT-115	MON 11-NOV-19	11	1		**Computer networks, the Internet, and the World Wide Web (WWW)**	CCAC.115.LO.10: Discuss the computer hardware needs and solutions for an enterprise, the importance of computer backup, and steps involved with a disaster recovery plan.	10.E.1:

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CIT-115	WED 13-NOV-19		2		Networking stations Module: World Wide Web (WWW) Essentials	CCAC.115.LT.12: Enterprise computing technologies (RAID, SANs, blade servers, thin clients, high-availability) CCAC.115.LO.9: Identify the uses of various programming languages and development tools. CCAC.115.LT.11: Programming languages (low level, procedural, object-oriented, Web page development) and characteristics (development cycle, documentation, control structures) CCAC.115.LO.6: Describe the structure of the Internet, how to access and connect to the Internet, the components of a URL and IP address, types of e-commerce, and how various services work. CCAC.115.LO.7: Describe various network communications standards, communication media, communication devices, and network architectures (client/server, peer-to-peer). CCAC.115.LT.8: Network design (LANs and WANs, architectures, topologies) and Communications characteristics (standards, devices, media)	
CIT-115	MON 18-NOV-19	12	1	Wrap up networking stations	**Computer networks, the Internet, and the World Wide Web (WWW)** Networking stations **Securing digital ecosystems: Fundamentals of security: access, storage, transmission** Encrypted hide-and-seek Hasher and TEA algos Hashing worksheet	CCAC.115.LO.11: Describe types of malware, techniques to prevent unauthorized access, methods of encryption, and risks & safeguards associated with wireless communications CCAC.115.LT.10: . Computer Security (Internet and network attacks, theft, failures, backups, privacy) and health concerns	11.E.1:
CIT-115	WED 20-NOV-19		2	Transition to security topics before turkey break			
CIT-115	MON 25-NOV-19		-	-			
CIT-115	WED 27-NOV-19			-			

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CIT-115	MON 2-DEC-19	13	1		**Security and Languages** Computer langauges	**CCAC.115.LO.11:** Describe types of malware, techniques to prevent unauthorized access, methods of encryption, and risks & safeguards associated with wireless communications **CCAC.115.LT.10:** . Computer Security (Internet and network attacks, theft, failures, backups, privacy) and health concerns	**12.E.1:**
CIT-115	WED 4-DEC-19		2				
CIT-115	MON 9-DEC-19	14	1	(Today we recover the Monday we lost to Labor day on 2-SEP	**Culminating project design & implementation**		
CIT-115	MON 16-DEC-19	14	2	Final session! Please come prepared to complete your final grade proposal card	**Culminating project design & implementation** **Sharing our culminating projects** CIT/DAT Course planning survey Final session checklist	**13.L.1:** **13.L.2:**	**13.E.1:**