INT1110
PC Hardware and Software
SYLLABUS

Course Title: PC Hardware and Software	**Course Number:** INT1110	**Revision Date:** 4/6/2023 **Online available for approved campuses**	
Quarter Credit Hours: 4.00	**Course Length:** 5 weeks	**Breakdown of Course Hours:** 40 Outside Activity Hours 20 Lecture Hours 40 Lab Hours	
Instructor: To Be Determined When Registered	**Meeting Days/Times:** To Be Determined When Registered **Term(s):** To Be Determined When Registered **Course Start:** To Be Determined When Registered **Course End:** To Be Determined When Registered		
Course Catalog Description: A course to develop technical skills related to PC Maintenance and Support. Topics include the anatomy of a PC and its components, installation, PC troubleshooting, networking (devices, media, wireless) and implementation, printers and printer support, and customer service and interaction. This course helps prepare students with the necessary knowledge and skills to take the CompTIA A+ Certification Exam (Essentials). Prerequisite: None.			
Prerequisite(s): None **Corequisite(s):** None			
Required Text: Student Course Experience , Edition: N/A, , Pearson, , ISBN: uCertify Integrated			

Other Classroom Resources:
In addition to textbooks, workbooks, lab manuals or other required materials, courses may utilize sources from the library, Internet sites, periodicals, newspapers, professional (or business) publications, state specific laws or codes, magazines, personal interview, guest speakers, publisher provided information , instructor work experience, video, audio or other visual files/documents to convey and aid in obtaining course objectives. Your instructor will provide specific information on resources that will be utilized/required to support content and aid in research.

Online Access Requirement:
Students are expected to have computer access with an internet connection when taking online coursework. Public access or workplace access may be limited due to firewalls. Students must have word processing software such as Google Docs, Microsoft Word, or Office365 in order to submit papers.

** This is not intended to be a comprehensive list and additional items/supplies/equipment may be provided to the student as part of their program, or information provided on how to obtain the required items.

Teaching Strategies:
Instructors utilize a variety of teaching strategies and methods in the instruction process. These may include but are not limited to lecture, demonstration, group projects, guest speakers, audio-visual presentations, internet activities, and simulated work experiences.

Outside Activity Hours:
Lecture, Lab, Clinic, or Externship/Practicum hours as indicated on the syllabus represent hours utilized in determination of total credits awarded in the course for credit bearing courses. Time spent in preparation of new material will usually require a minimum of two hours for each 1 hour identified as lecture, but it is course specific. Please consult your instructor. This preparation time may include the reading of textbook material, homework assignments, preparation for lab assignments, workbook activities, awareness/review of any safety precautions, or research of relevant supplemental information. Additionally, students are expected to record notes to be reviewed as background for subsequent lessons, homework, or in preparation for exams. Review of and reflection on classroom discussions, demonstrations, or presentation is included in the recognition of the additional course hours. For clock hour courses, the breakdown of Lecture, Lab, and Clinic represent the clock hours required in the course and the structure of the delivery/acquisition of course material. Clock hour courses do not include outside activities in the calculation of hours.

A. For Ground Portions of the Course: Students will be assigned specific activities to incorporate out-of-class hours to achieve course objectives.. Out-of-class assignments are those activities identified to be completed outside of structured/scheduled class meeting time for non-clock hour program. These assignments will be graded as part of the overall course grade. For specific assignments and required/estimated time on task, see attached course outline. For Campus Based Students these are identified on the Syllabus header as Outside Activity Hours and on the course outline as Out-Of-Class Hours.

B. For Online Portions of the Course: Courses are delivered via Moodle or Canvas in an asynchronous format. Students enrolled in online courses/programs are expected to spend an equivalent amount of time on task as campus-based students in meeting course objectives. This is applicable to students enrolled in blended or hybrid learning courses as well.

Grading and Evaluation:
Course requirements include evaluation in the areas of class participation (including attendance), homework/assignments, quizzes/examinations, and project/portfolio items as follows:

Final Grades will be determined by:		*Letter Grading Scale:*	
Homework/Assignments	30 %	90-100%	A
Assessments (Quizzes/Examinations)	20 %	80-89%	B
Project/Portfolio	30 %	70-79%	C
Discussion/Attendance/Class Participation	20 %	60-69%	D
Total	100%	0-59%	F

*Review the Course Objectives/Lessons Page(s) for Grade Criteria requirements in the final section of this syllabus.

Definitions of Graded Activities used to verify objectives of course have been met:

Homework/Assignments:
Homework will be identified on the course outline or communicated by the instructor. Assignment due dates will be established by the instructor as well as the mode and form of submission. Assignments turned in after the scheduled due date for any reason may be assessed as late credit by the instructor. Homework assignments will require outside preparation to execute activities in attainment of course objectives.

Assessments (Quizzes/Examinations):
Courses are designed with both formative and summative assessments and may be referred to as quizzes or examinations. Announced and unannounced assessments may be used as a means to verify attainment of course objectives. Students will be expected to spend time outside of class studying materials in preparation for any assessment as well as time spent reviewing results in preparation for homework, class discussion, quizzes, or project assignments.

Project/Portfolio:
Project requirements are outlined in detailed separate instructions and reflect the practical application of fundamentals and principles discussed in the course. Projects may include library research as well as classroom/laboratory, externship/practicum/clinic, and/or other activities. Project assignments require utilization of course materials and additional resources in demonstration of course objectives. Students are expected to incorporate time outside of class to research, create, and prepare projects for review and/or demonstration and assessment.

- Portfolio assignments are a part of some course objectives. Portfolio assignments are outlined in separate documentation provided by the instructor. Portfolio submissions may be incorporated into the course grade.
- For externship/practicum courses, the final project is a presentation covering the student's experience on the externship/practicum site.
- Competencies: Some courses require students complete competencies, or hands on skills. For CAAHEP accredited programs, students have a maximum of three formal attempts to complete a competency (each subsequent attempt may not have points deducted just for it being another attempt). Students must pass competencies with a minimum of a 75% grade. For NCCER recognized programs, students must earn a 70% or greater on their competencies. Competency grades are assessed in the Project/Portfolio category of a course. Students who do not complete required competencies successfully may fail the course in its entirety.

Discussion/Attendance/Class Participation:
This portion of the grade depends on the delivery method of the course. For ground delivery (and ground portions of hybrid delivery), the grade includes evaluation of self-directed work habits such as attendance, class preparedness, and communication. Class participation may include group activities, peer review, role playing, lab work, or demonstration. Instructor facilitated discussion may be used in verification of course objectives. For hybrid and/or online delivery, the online discussion grade is comprised of two parts: Attendance and Participation. Online students mark attendance by accessing the online classroom and initiating any number of online activities such as forums (discussion), assignments, or assessments. Failure to login or engage in activities which indicate presence in the course may affect a student's financial aid. Participating in the weekly discussions is paramount to the learning experience and allows students and instructors to share understandings, expertise, and study the content from new perspectives. Participation is earned by being an active member of the Lesson's discussion board. Answering the main discussion post is required in order to earn full participation points for the week. Please see the Discussion Rubric for specific details on quantity and length of posts required for assignment of grade. Class preparation will require additional time outside of scheduled hours. Students are expected to have read the assigned materials and be prepared to discuss the content with the instructor and peers.

Attendance Policy:
The campus is committed to the principle that class attendance is an essential part of its educational programs and its goal to prepare all students for the responsibilities of their chosen career fields. Regular class attendance is mandatory in all classes and attendance is recorded for every regularly scheduled class. All absences, late arrivals, and early departures are recorded, are counted as class time missed, and become a part of the student's permanent record. No distinction is made between excused and unexcused absences. Failure to comply with the attendance policy can result in failure to meet course competencies, suspension, or dismissal. Externship and clinic courses have their own specific attendance criteria that are announced at the beginning of the class and may require makeup of all hours missed. The student is responsible for all material covered daily in each class for which the student is registered. In no instance does absence from class relieve the student from the responsibility for the performance of any part of the class work. The student is responsible for initiating any request to make up work missed because of class absence (see Makeup Policy). Makeup of missed classes does not remove an absence from a student's record. Please reference your campus catalog for your location's specific attendance policy and expectations.

Makeup Policy:
The campus recognizes that there are circumstances and events which require students to miss classes, resulting in the need for makeup work. Because Ancora believes the purpose of completing work is to help the student learn and be successful, instructors are expected to work with students on the submission of makeup work. Students must initiate contact with the instructor to discuss the makeup work in question. The student will work with the instructor on new deadlines and any deductions that may result based on the late work, not to exceed 20% per assignment. Examinations may be made up only with documented extenuating circumstances. The deadline must be prior to the end of the term, or else the student must apply for an Incomplete (see the Incomplete policy). Online modality assessments are considered normal makeup work, not examinations for purposes of this policy. The procedure for requesting the opportunity to makeup required work can be obtained from the instructor. * Students will not be charged for completing makeup work.

Special Needs:
Students in need of special accommodation should notify their Director of Education. This will follow Ancora's Student Disability Accommodation process and procedure as published in campus catalogs.

Course Outline:
Courses are scheduled on campus to accommodate classroom availability and time required to deliver course content. Online meeting requirements will be posted in the online classroom. The syllabus reflects total hours required to meet course objectives. The number of sessions and length of sessions may vary and should not be taken as a direct representation of days/weeks in the classroom. Time on task is identified for the various options utilized to deliver and assess student achievement of course objectives. The sessions represent the systematic delivery of course content with direction for faculty and students in the logical delivery of the materials to be covered.

INT1110 PC Hardware and Software

Course Objectives
Upon completion of the course, the student will be able to:

- Demonstrate knowledge and ability to install, configure, and maintain various types of computer hardware.
- Employ networking concepts to address basic networking hardware and protocols.
- Assess hardware and software related issues and distinguish the similarities and differences of laptop computers.
- Apply best practices to a variety of operational procedures related to safety, environmental impact, communication and professionalism.

In-Class and Out-of-Class Weekly Hours
Learning Unit Lecture Hours: 4
Learning Unit Lab/Clinical Hours:
Learning Unit Out-of-Class Homework Hours: 8

Learning Unit-Additional Items/Resources
- Classroom Learning Activities may include the following:
  - Media Ancillaries (Videos, Flashcards, Other as determined by the instructor)
  - PowerPoint slides
  - Internet Information
  - Group Discussion
  - Handouts and Exercises
  - Case Studies

Learning Unit Grading/Assessment
- Discussion Questions
- Assignments/Quizzes

Reading Assignments
uCertify integrated eBook, (11th Edition). uCertify, 2022.

Write down any questions you have regarding the readings and share them during class for answers.

Learning Unit 1 | Introduction to the World of IT and the Motherboard

- Instructor Welcome
- Introductions
- Course Overview
- Syllabus Overview
- Classroom Etiquette and Expectations

Learning Topics: Chapter 1

When you complete this Learning Unit, you will learn about:

- Qualities a technician should have
- Basic skills needed to function in the Windows environment and in the technical world
- Important computer parts
- Basic computer terms
- How to recognize and identify important motherboard parts
- The basics of how a processor works
- Issues to consider when upgrading or replacing a motherboard or processor
- Information regarding GPUs
- How to add cards to computers
- The differences between PCI, AGP, and PCIe adapters and slots
- Motherboard technologies such as HyperTransport, Hyperthreading, and multicore
- Motherboard form factors and security options
- Symptoms of motherboard and CPU problems
- The benefits of active listening

Assignments: Chapter 1

- Read Chapter 1 in the eBook
- uCertify Assignments / Labs / Quiz
    - 1.24.1 Identifying the CPU Socket
    - 1.26.1 Installing a Processor
    - 1.31.1 Installing Expansion Cards on a Motherboard
    - 1.37.1 Installing Motherboard Components
    - Lesson 1 Quiz
- Learning Unit 1 Discussion Question
    - When selecting a motherboard for building a PC, what do you think is the most important consideration? How will that impact the rest of the build?

Learning Unit 2 | Memory and Storage Devices

- Review Previous Learning Unit
- Introduce Learning Unit 2
- Review Classroom Etiquette and Expectations

Learning Topics: Chapter 2

When you complete this Learning Unit, you will learn about:

- Different memory technologies
- How to plan for a memory installation or upgrade
- How to install and remove memory modules
- How to optimize memory for Windows platforms
- Best practices for troubleshooting memory problems
- The benefits of teamwork
- Basic storage terms
- IDE (PATA), SATA, eSATA, SSD, and SSHD technologies
- How to install and configure storage devices, including RAID
- How to fix storage device problems
- How to keep a drive healthy
- How to create and troubleshoot a RAID array
- How to create and use Windows storage spaces
- Effective phone communication

Assignments: Chapter 2

- Read Chapter 2 in the eBook
- uCertify Assignments / Labs / Quiz
    - 2.3.1 Connecting the Motherboard to the Internal Hard Drive
    - 2.6.1 Verifying the RAM usage
    - Lesson 2 Quiz
- Learning Unit 2 Discussion Question
    - In order to use dual or more channels of RAM, what rules should be followed? How do we install the RAM correctly and make sure the RAM is functioning in the desired mode?

Learning Unit 3 | Introduction to Configuration, Disassembly, and Power

- Review Previous Learning Unit
- Introduce Learning Unit 3
- Review Classroom Etiquette and Expectations

Learning Topics: Chapter 3

When you complete this Learning Unit, you will learn about:

- The importance of BIOS and UEFI
- How to replace a motherboard battery
- What system resources are and how to view/change them
- Basic steps needed to install, configure, and verify common peripheral devices and USB, eSATA, and network cards
- How to troubleshoot configuration and device issues
- How to prevent static electricity, RFI, and EMI from harming or interfering with a computer
- The tools needed to work on computers
- How to take apart a computer and put it back together
- How to perform basic voltage and continuity checks
- How to install, upgrade, or replace a power supply
- Tips for good written communication

Assignments: Chapter 3

- Read Chapter 3 in the eBook
- uCertify Assignments / Labs / Quiz
    - 3.3.1 Accessing the BIOS Setup in Windows 10
    - 3.25.1 Replacing the Power Supply
    - Lesson 3 Quiz
- Learning Unit 3 Discussion Question
    - Describe the role that the system BIOS or UEFI plays in starting a PC, and describe at least two common settings that can be controlled via the BIOS setup program.

Learning Unit 4 | Connectivity, Video, and Multimedia Devices

- Review Previous Learning Unit
- Introduce Learning Unit 4
- Review Classroom Etiquette and Expectations

Learning Topics: Chapter 4

When you complete this Learning Unit, you will learn about:

- The purposes of various computer ports
- What to do if you don't have a particular port
- What types of devices connect to specific ports
- Different types of connectors and cables
- Basic steps needed to install, configure, and troubleshoot video cards, sound cards, and projectors
- How to install, configure, and troubleshoot optical drives and scanners
- How to use Windows to verify optical drives, sound cards, and scanners
- How to provide support with a positive, proactive attitude

Assignments: Chapter 4

- Read Chapter 4 in the eBook
- uCertify Assignments / Labs / Quiz
    - 4.5.1 Installing a PCI Sound Card
    - 4.5.2 Installing a NIC
    - Lesson 4 Quiz
- Learning Unit 4 Discussion Question
    - Provide five tips that might help someone identify the different computer ports.

Learning Unit 5 | Printers, Multifunction Devices, and Mobile Devices

- Review Previous Learning Unit
- Introduce Learning Unit 5
- Review Classroom Etiquette and Expectations

Learning Topics: Chapter 5

When you complete this Learning Unit, you will learn about:

- How each type of printer operates
- The steps required to install a printer or multifunction device
- Preventive printer maintenance
- How to control printers/multifunction devices from Windows and make printer adjustments
- How to solve common printer/multifunction device problems
- Techniques for ethical and professional behavior
- The operating systems mobile devices use
- How to configure mobile devices
- How to back up and secure mobile devices
- How to troubleshoot mobile devices
- The importance of appearance in the IT field

Assignments: Chapter 5

- Read Chapter 5 in the eBook
- uCertify Assignments / Labs / Quiz
    - 5.1.1 Installing a Printer
    - 5.17.1 Sharing a Printer
    - 5.32.1 Configuring Email in Android
    - 5.36.1 Installing Laptop Components
    - Lesson 5 Quiz
- Learning Unit 5 Discussion Question
    - Describe the purpose of Mobile Device Management (MDM) and list at least two commercial MDM solutions. How does it help organizations support users who choose to bring their own devices (BYOD)?