COLLEGE OF THE DESERT

Course Code CIS-340A

Course Outline of Record

1. Course Code: CIS-340A
2.   a. Long Course Title: Information and Communication Technology Essentials I
    b. Short Course Title: IT ESSENTIALS I
3.   a. Catalog Course Description:

      CompTIA certifications help students build a solid foundation of essential knowledge and skills that will help students earn employment in technology-related careers. The CompTIA A+ certification assures employers that their applicant is prepared to enter the workforce as an entry-level computer support technician. Computer support technicians provide technical assistance to computer users. They may answer questions or resolve computer problems for clients in person, or via telephone or electronically. They may provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Completion of this course prepares students for the CompTIA A+ 220-901 industry certification exam.

    b. Class Schedule Course Description:

      Introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level ICT professionals.

    c. Semester Cycle (*if applicable*): *N/A*
    d. Name of Approved Program(s):

        • A+ PREPARATORY Certificate of Completion
4. Total Units: 0   Total Semester Hrs: 27.00
   Lecture Units: 0   Semester Lecture Hrs: 27.00
   Lab Units: 0   Semester Lab Hrs: 0
     Class Size Maximum: 32   Allow Audit: No
     Repeatability Noncredit - Unlimited
     Justification 0
5. Prerequisite or Corequisite Courses or Advisories:
Course with requisite(s) and/or advisory is required to complete Content Review Matrix (CCForm1-A)
N/A
6. Textbooks, Required Reading or Software: *(List in APA or MLA format.)*
    a. Meyers, Mike (2016). *Mike Meyers' CompTIA A+ Guide to Managing and Troubleshooting PCs* (5/e). McGraw Hill. ISBN: 978-125958954
     College Level: Yes
     Flesch-Kincaid reading level: 11
7. Entrance Skills: *Before entering the course students must be able:*

8. Course Content and Scope:
   Lecture:

> 1. PC hardware
>   • Identification orientation and operation of system boards.
>   • Identification orientation and operation of internal and external components.
>   • Hardware installation and upgrades.
>   • Modular concepts and applications.
>   • Selecting replacement computer components, and configurations for specialized computer systems.
>   • Computer assembly.
>   • Preventive maintenance.
>   • General guidelines for creating preventive maintenance programs.
> 2. Networking

- Provides an overview of network principles, standards, and purposes.
- Types of network topologies, protocols, and logical models, in addition to the hardware needed to create a network.
- Network software, communication methods, and hardware relationships.
- Configuration, troubleshooting, and preventive maintenance.

3. Laptops
  - Know how to configure, repair, and maintain these devices.
  - Service laptops and portable devices.
4. Printers
  - How printers operate, what to consider when purchasing a printer, and how to connect printers to an individual computer or to a network.
  - Web-based printing in Windows.
5. Operational procedures
  - Document, procedures and operational guidelines.
  - Disaster assess recovery management.
  - Infrastructure for an IT security policy.

Lab: *(if the "Lab Hours" is greater than zero this is required)*

- Practice exams for 901 CompTIA A+ examination.
- Watch instructional videos.
- Complete performance-based questions and simulations.
- Apply concepts discussed in lecture like for example, assembling computers from components, configuring those components, troubleshooting case studies, and configuring user privileges.

9. Course Student Learning Outcomes:

1.

Demonstrate higher-order thinking skills about issues, problems, and explanations for which multiple solutions are possible.

2.

Utilize technology to locate, organize, and evaluate information to make decisions and solve computer hardware related issues.

3.

Classify and identify the necessary equipment to effectively manage a networked environment and perform security forensics.

10. Course Objectives: *Upon completion of this course, students will be able to:*
   a. Assemble components based on customer requirements.
   b. Install, configure and maintain devices, PCs and software for end users.
   c. Understand the basics of networking and security/forensics.

11. Methods of Instruction: *(Integration: Elements should validate parallel course outline elements)*
   a. Activity
   b. Collaborative/Team
   c. Demonstration, Repetition/Practice
   d. Discussion
   e. Distance Education
   f. Individualized Study
   g. Laboratory
   h. Lecture
   i. Observation
   j. Participation
   k. Supplemental/External Activity
   l. Technology-based instruction

Other Methods:

Handouts to assist and define important terms.

12. Assignments: *(List samples of specific activities/assignments students are expected to complete both in and outside of class.)*
    In Class Hours: 27.00
    Outside Class Hours: 54.00
    a. In-class Assignments
        1. Given a scenario, configure settings and use BIOS/UEFI tools on a PC.
        2. Explain the importance of motherboard components, their purpose, and properties.
        3. Compare and contrast various RAM types and their features.
        4. Install and configure expansion cards.
        5. Install and configure storage devices and use appropriate media.
        6. Install various types of CPUs and apply the appropriate cooling methods.
        7. Compare and contrast various PC connection interfaces, their characteristics and purpose.
        8. Install a power supply based on given specifications.
        9. Given a scenario, select the appropriate components for a custom PC configuration, to meet customer specifications or needs.
        10. Compare and contrast types of display devices and their features.
        11. Identify common PC connector types and associated cables.
        12. Install and configure common peripheral devices.
        13. Install SOHO multifunction device / printers and configure appropriate settings.
        14. Compare and contrast differences between the various print technologies and the associated imaging process.
        15. Given a scenario, perform appropriate printer maintenance.
        16. Identify the various types of network cables and connectors.
        17. Compare and contrast the characteristics of connectors and cabling.
        18. Explain properties and characteristics of TCP/IP.
        19. Explain common TCP and UDP ports, protocols, and their purpose.
        20. Compare and contrast various WiFi networking standards and encryption types
        21. Given a scenario, install and configure SOHO wireless/wired router and apply appropriate settings.
        22. Compare and contrast Internet connection types, network types, and their features.
        23. Compare and contrast network architecture devices, their functions, and features.
        24. Given a scenario, use appropriate networking tools.
        25. Install and configure laptop hardware and components.
        26. Explain the function of components within the display of a laptop.
        27. Given a scenario, use appropriate laptop features.
        28. Explain the characteristics of various types of other mobile devices.
        29. Compare and contrast accessories & ports of other mobile devices.
        30. Given a scenario, troubleshoot common problems related to motherboards, RAM, CPU and power with appropriate tools.
        31. Given a scenario, troubleshoot hard drives and RAID arrays with appropriate tools.
        32. Given a scenario, troubleshoot common video, projector and display issues.
        33. Given a scenario, troubleshoot wired and wireless networks with appropriate tools.
        34. Given a scenario, troubleshoot and repair common mobile device issues while adhering to the appropriate procedures.
        35. Given a scenario, troubleshoot printers with appropriate tools.
    b. Out-of-class Assignments
        Students will be assigned case based assignments involving reading, computer manuals, and general textbook reading that covers network communications, network operations, network security, and network design essentials.
        The primary assignments for this course involve the development of a fictional network, including designing and applying an IP address scheme for assigned network topologies, develop network security

policies, create a secure wireless connection, and assigning user account policies.
Case studies will be assigned requiring outside research and readings like the following. You company has just come into some extra money (around 10K) and would like to upgrade their wireless network (that is currently running 802.11b).
Give TWO wireless solutions that would meet your company's requirements. Explain the difference and similarities in the two choices you offered. The company current house only 25 employees but may expand in the near future.

13. Methods of Evaluating Student Progress: *The student will demonstrate proficiency by:*
   - Written homework
     Written reports/presentations of LAN and WAN communication codes/protocols. Written assignments to define mastery of the ideas behind communications within a LAN or across a WAN
   - Critiques
     Computer programs and analysis of the software suites of communications software.
   - Self-paced testing
   - Laboratory projects
     Projects to develop an understanding through research of LAN/WAN technologies.
   - Computational/problem solving evaluations
     Problem solving and testing of how to design/layout/analyze communication hardware/software.
   - Presentations/student demonstration observations
     Oral reports/presentations/performance of design and analysis of communication suites of hardware and software.
   - Group activity participation/observation
   - Product/project development evaluation
   - True/false/multiple choice examinations
     Examinations designed to assess students' mastery of LAN/WAN communication design
   - Mid-term and final evaluations
   - Student participation/contribution

14. Methods of Evaluating: Additional Assessment Information:

15. Need/Purpose/Rationale -- *All courses must meet one or more CCC missions.*
   PO - Career and Technical Education
     Fulfill the requirements for an entry- level position in their field.
     Apply critical thinking skills to execute daily duties in their area of employment.
     Apply critical thinking skills to research, evaluate, analyze, and synthesize information.
     Display the skills and aptitude necessary to pass certification exams in their field.
     Exhibit effective written, oral communication and interpersonal skills.
   IO - Personal and Professional Development
     Demonstrate an understanding of ethical issues to make sound judgments and decisions.
   IO - Scientific Inquiry
     Collect and analyze data. Skills of data collection include an understanding of the notion of hypothesis testing and specific methods of inquiry such as experimentation and systematic observation.
   IO - Critical Thinking and Communication
     Apply principles of logic to problem solve and reason with a fair and open mind.
   IO - Global Citizenship - Scientific & Technological Literacy
     Synthesize, interpret, and infer, utilizing information, data, and experience to solve problems, innovate, and explore solutions.
   IO - Global Citizenship - Ethical Behavior
     Apply ethical reasoning to contemporary issues and moral dilemmas.

16. Comparable Transfer Course

CIS 340A-Information and Communication Technology Essentials I

University System	Campus	Course Number	Course Title	Catalog Year

17. Special Materials and/or Equipment Required of Students:

18. Materials Fees: ☐ Required Material?

Material or Item	**Cost Per Unit**	**Total Cost**

19. Provide Reasons for the Substantial Modifications or New Course:

This course prepares students to complete the first of two exams to receive a basic IT certification known as A+. This certification will help them obtain employment in an IT-related field. The course is also oriented and the nontraditional student who does not desire to continue to a 4 year college but rather benefit from gainful IT-related employment.

20.   a. Cross-Listed Course *(Enter Course Code)*: *N/A*
     b. Replacement Course *(Enter original Course Code)*: *N/A*

21. Grading Method *(choose one)*: Pass/No Pass Only

22. MIS Course Data Elements
    a. Course Control Number [CB00]: CCC000580644
    b. T.O.P. Code [CB03]: 70100.00 - Information Technology, G
    c. Credit Status [CB04]: N - Noncredit
    d. Course Transfer Status [CB05]: C = Non-Transferable
    e. Basic Skills Status [CB08]: 2N = Not basic skills course
    f. Vocational Status [CB09]: Clearly Occupational
    g. Course Classification [CB11]: J - Workforce Preparation Enhanced Funding
    h. Special Class Status [CB13]: N - Not Special
    i. Course CAN Code [CB14]: *N/A*
    j. Course Prior to College Level [CB21]: Y = Not Applicable
    k. Course Noncredit Category [CB22]: J - Workforce Preparation
    l. Funding Agency Category [CB23]: Y = Not Applicable
    m. Program Status [CB24]: 1 = Program Applicable
Name of Approved Program *(if program-applicable)*: A+ PREPARATORY
Attach listings of Degree and/or Certificate Programs showing this course as a required or a restricted elective.)

23. Enrollment - Estimate Enrollment
First Year: 12
Third Year: 32

24. Resources - Faculty - Discipline and Other Qualifications:
    a. Sufficient Faculty Resources: Yes
    b. If No, list number of FTE needed to offer this course: *N/A*

25. Additional Equipment and/or Supplies Needed and Source of Funding.
N/A

26. Additional Construction or Modification of Existing Classroom Space Needed. *(Explain:)*
N/A

27. FOR NEW OR SUBSTANTIALLY MODIFIED COURSES
Library and/or Learning Resources Present in the Collection are Sufficient to Meet the Need of the Students Enrolled in the Course: Yes

28. Originator Felix Marhuenda-Donate   Origination Date 09/11/16