**COURSE SYLLABUS**

**Com 100: Introduction to Computer Science(Hardware)**

**Course Description**

This course is designed to give the student a solid theory basis for PC repair. The course covers system types, system assembly, PC components, and diagnostic tools. Emphasis is placed on understanding the PC components, how they function, and troubleshooting skills. Additional topics include PC installation, configuration, upgrading, troubleshooting, diagnosing, safety, preventative maintenance, operating systems diagnostics, and operating system upgrades.

**General Course Information**

|  |  |
| --- | --- |
| Number of Units/Weeks | 4/10 |
| #Hours Lecture/#Hours Laboratory/#Hours Homework | 30/20/80 |
| Prerequisite(s) | None |
| Co-requisites (s) | None |
| Course Developer(s) | Robert Scott MS |
| Date Approved / Last Review | May 2017 |

**Learning Outcomes**

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

● Compare, contrast, and evaluate the features of various operating systems.

● Discuss the hardware and software components that comprise the modern

PC.

● Perform basic troubleshooting on modern PCs

● Demonstrate basic tools used within Windows Operating Systems.

**Instructional Methods Employed in this Course**

A number of instructional/learning methods are employed in this course, including the following:

● Lecture and reading assignments.

● Hands-on exercises.

● Team environment.

● Practical application of theory and skills in authentic design projects.

● Hands-on projects complementing the course content.

**Information Resources for this Course**

 **Textbook**

Andrews, J. (2014). A+ Guide to Managing and Maintaining your PC,8th Edition. Course Technology/Cengage Learning Incorporated.

**Lab Manual**

Andrews, J. (2014). A+ Guide to Managing and Maintaining your PC,8th Edition. Course Technology/Cengage Learning Incorporated.

 **Web Site Readings**

CompTIA A+® Certification (official site)

<http://www.comptia.org/certifications/listed/a.aspx>

Free CompTIA A+ Certification Training Course <http://www.professormesser.com/free-a-plus-training/220-701/professor-messers->free-220-70x-comptia-a-training-course

CompTIA A+ Training - Hardware Components and more <http://www.trainsignaltraining.com/category/comptia/a-plus/>

Complete illustrated Guide to the PC Hardware <http://www.karbosguide.com/>

(Reviewed July 15, 2010)

A tutorial on binary numbers

http://www.math.grin.edu/~rebelsky/Courses/152/97F/Readings/student-binary

**Table/Topics & Assignments**

**Types of Assignments: Lecture -**

Considered Lecture Hours

**Classroom Discussion -**

Considered Lecture Hours

**In Class Critique -**

Considered Lecture Hours

**Delivering Oral Presentations -**

Considered Lecture Hours

**In Class (IC) Exercise -**

Considered Lecture Hours

**Reading -**

Considered Homework (HW), work done outside of class

**WebClass lesson (non-online courses) -**

Considered HW, work done outside of class

**Lab Work -**

Considered Lab Hours

**Quiz, Midterm or Final -**

Considered Lecture Hours

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Week 1 | | | | | | | | |
| **Type** | | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | | Point  Value | **Due** |
| LEC 1A | | Ch. 1 Computer Parts and Tools  Ch. 2 Working Inside a Computer | 3 | 2 | -- | | -- |  |
| LAB 1A | | System Utilities, Snip tool, Computer Inventory form. Network Settings | \_ | \_\_ | \_ | | 50 | Week 3 Wednesday |
| HW 1A | | Read Chapters 1-2 (79 pages). Evaluated in HW1B. | -- | -- | 7.5 | | -- |  |
| HW 1B | | Chapter Review Questions | -- | -- | 3.3 | | 25 | Week 2 Tuesday |
| Total Week 1 | |  | 3 | 2 | 10.8 | | 75 |  |
|  | |  |  |  |  | |  |  |
| Week 2 | | | | | | | | |
| **Type** | | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | | Point  Value | **Due** |
| LEC 2A | | Ch. 3 Windows Operating System  Ch. 4 Motherboards | 3 | 2 | \_ | | -- |  |
| IC EX 2A | | Quiz A Ch. 1, 2 | -- | -- | -- | | 50 |  |
| HW 2A | | Read Chapters 3-4 (91 pages). Evaluated in HW2B. | -- | -- | 8.1 | | -- |  |
| HW 2B | | Chapter Review Questions Ch. 3-4 | -- | -- | 3.3 | | 25 | Week 3 Tuesday |
| Total Week 2 | |  | 3 | 2 | 10.4 | | 75 |  |
|  | |  |  |  |  | |  |  |
|  | |  |  |  |  | |  |  |
| Week 3 | | | | | | | | |
| **Type** | | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | | Point  Value | **Due** |
| LEC 3A | | Ch. 5 Supporting Processors and RAM  Ch. 6 Supporting Hard Drives | 3 | 2 | -- | | -- |  |
| HW 3A | | Read Chapters 5-6 (99 pages). Evaluated in HW3B. | -- | -- | 9.3 | | -- |  |
| HW 3B | | Chapter Review Questions Ch. 5-6 | -- | -- \_\_ | 3.3 | | 25 | Week 4 Tuesday |
| LAB 3A | | Speecy tool, BIOS Settings, BurnIn Test tool, Hard Drive tools, Memory Tools | -- | \_\_ | - | | 50 | Week 4 Wednesday |
| Total Week 3 | |  | 3 | 2 | 11.2 | | 75 |  |
|  | |  |  |  |  | |  |  |
| Week 4 | | | | | | | | |
| **Type** | | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | | Point  Value | **Due** |
| LEC 4A | | Ch. 7 Installing Windows  Ch. 8 Supporting I/O Devices | 3 | 2 | -- | | -- |  |
| IC EX 4A | | Quiz B Ch. 3-6 | -- | -- | -- | | 50 |  |
| W 4A | | Read Chapter 7-8 (118 pages). Evaluated in HW4B. | -- | -- | 11 | | -- |  |
| HW 4B | | Chapter Review Questions Ch. 7-8 | -- | -- | 3.3 | | 25 | Week 5 Tuesday |
| Total Week 4 | |  | 3 | 2 | 14.1 | | 75 |  |
|  | |  |  |  |  | |  |  |
|  | |  |  |  |  | |  |  |
|  | |  |  |  |  | |  |  |
|  | |  |  |  |  | |  |  |
| Week 5 | | | | | | | | |
| **Type** | | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | Point  Value | | **Due** |
| LAB 5A | | **Midterm Practical**  Before, After, Support Hardware Lab: tear down & build up | 2 | 2 | -- | 75 | |  |
| EXAM 5A | | **Mid Term Exam** | 1 | -- | -- | 125 | |  |
| HW5A | | Read Chapters 10,11 (118 pages). Evaluated in HW6B. |  |  | 10.3 |  | |  |
| HW5B | | Chapter Review Questions Ch. 10-11 |  |  |  | 25 | | Week 6 Tuesday |
| LAB 5A | | Device Manager, Hard Drive Maintenance Procedures, Command Line Syntax | -- |  | -- | 50 | | Week 8 Wednesday |
| Total Week 5 | |  | 3 | 2 |  | 275 | |  |
|  | |  |  |  |  |  | |  |
| Week 6 | | | | | | | | |
| **Type** | **Topic/Description** | | LEC Hours | LAB Hours | HW Hours | | Point  Value | **Due** |
| LEC6A | Ch. 10 Maintaining Windows  Ch. 11 Optimizing Windows | | 3 | 2 | -- | | -- |  |
| HW 6A | Read Chapters 12-13 Evaluated in HW6B. | | -- | -- | 8.8 | | -- |  |
| HW 6B | Chapter Review Questions 12-13 | | -- | -- | 3.3 | | 25 | Week 7 Tuesday |
| Total Week 6 |  | | 3 | 2 | 12.1 | | 25 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week 7 | | | | | | |
| **Type** | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | Point  Value | **Due** |
| LEC7A | Ch. 12 Troubleshooting Windows and Applications  Ch. 13 Troubleshooting Hardware | 3 | 2 | -- | -- |  |
| IC EX 7A | Quiz C Ch. 10-11 | -- | -- | -- | 50 |  |
| HW 7A | Read Chapters 14, 18 Evaluated Hw7B | -- | -- | 6 | -- |  |
| HW 7B | Chapter Review Ch. 14, 18 | -- | -- | 3.3 | 25 | Week 8 Tuesday |
| LAB7A | Create Windows 7 Repair disk, UBCD flash drive, y |  |  |  | 50 |  |
| Total Week 7 |  | 3 | 2 | 9.3 | 125 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week 8 | | | | | | |
| **Type** | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | Point  Value | **Due** |
| LEC 8A | Ch. 14 Troubleshooting Windows Startup  Ch. 18 Security Strategies | 3 | 2 | -- | -- |  |
| HW 8A | Read Chapters 19 Evaluated in HW8B. | -- | -- | 6.2 | -- |  |
| HW 8B | Chapter Review Ch. 19 | -- | -- | 1.3 | 25 | Week 9 Tuesday |
| Total Week 8 |  | 3 | 2 | 7.5 | 25 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week 9 | | | | | | |
| **Type** | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | Point  Value | **Due** |
| LEC 9A | Security Essentials and  Practices | 3 | 2 | -- | -- |  |
| IC EX 9A | Quiz D Ch. 14, 18 | -- | -- | -- | 25 |  |
| LAB9A | Build a computer Paper  Research and build a computer (7 pages) |  |  |  | 50 |  |
| Total Week 9 |  | 3 | 2 | 12.6 | 75 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week 10 | | | | | | |
| **Type** | **Topic/Description** | LEC Hours | LAB Hours | HW Hours | Point  Value | **Due** |
| LAB10A | Final Practical Lab  Troubleshoot/configure | 2 | 2 | -- | 50 | Week 10 |
| EXAM 10A | **Final** | 1 | -- | -- | 125 | Week 10 |
| Total Week 10 |  | 3 | 2 | -- | 175 |  |

**Course Hours Summary**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Topic** | LEC Hours | ELP Hours |
| 1 | Intro to Binary, Computer Parts, Working in a Computer | 3 | 10.8 |
| 2 | Windows Operating System and Motherboards | 3 | 10.4 |
| 3 | Supporting Processors, RAM and Hard Drives | 3 | 11.2 |
| 4 | Installing Windows, supporting I/O Devices | 3 | 14.1 |
| 5 | Basic Skills/Midterm Review/Midterm | 2 |  |
| 5 | Midterm Exam | 1 |  |
| 6 | Maintaining and Optimizing Windows | 3 | 12.1 |
| 7 | Troubleshooting Windows & Hardware Problems | 3 | 9.3 |
| 8 | Troubleshooting Windows Startup and Security Strategies | 3 | 7.5 |
| 9 | Security essentials and Practices | 3 | 12.6 |
| 10 | Basic Skills /Review Final | 2 |  |
| 10 | Final Exam | 1 |  |
| Total |  | 30 | 92 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Your Grades for this Course** |  |  |  |  |
| Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity. | | | | |
| Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows: | | | | |
|  | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Coleman University Grade Assignment Policy:** | | | |  |  |  |
|  | **Percent** | | **Letter Grade** | **Grade Points** |  |  |
|  | 94-100 | | A | 4 |  |  |
|  | 90-93 | | A- | 3.67 |  |  |
|  | 87-89 | | B+ | 3.33 |  |  |
|  | 84-86 | | B | 3 |  |  |
|  | 80-83 | | B- | 2.67 |  |  |
|  | 77-79 | | C+ | 2.33 |  |  |
|  | 74-76 | | C | 2 |  |  |
|  | 70-73 | | C- | 1.67 |  |  |
|  | 67-69 | | D+ | 1.33 |  |  |
|  | 64-66 | | D | 1 |  |  |
|  | 60-63 | | D- | 0.67 |  |  |
|  | N/A | | INC | 0 |  |  |
|  | N/A | | W | 0 |  |  |
|  | 60 or above | | CR | 0 |  |  |
|  | 59 or below | | NC | 0 |  |  |
|  | N/A | | I | 0 |  |  |
|  | N/A | | W | 0 |  |  |
|  | N/A | | AU | 0 |  |  |
|  | N/A | | TR | 0 |  |  |
|  | N/A | | WV | 0 |  |  |
|  |  |  |  |  |  |  |
|  | **Legend** | | |  |  |  |
|  | CR = Credit | NC = No Credit | |  |  |  |
|  | I = Incomplete | W = Course Withdrawal | |  |  |  |
|  | AU = Audit | TR = Transfer Credit | |  |  |  |
|  | WV = Waiver |  | |  |  |  |
|  |  |  |  |  |  |  |

**Academic Accommodation / Adjustment Policy:**

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students’ instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.