Wayne County Community College District

Course Syllabus

CT 209   **Computer Repair**

CREDIT HOURS: 4.00

CONTACT HOURS: 90.00

COURSE DESCRIPTION:

Prereq: CIS 110 or CT 205
This course is designed to provide an indepth
study of various areas that are related
to servicing computers and peripheral
devices. Areas of study include assembly, disassembly
of computers, upgrading hardware,
troubleshooting hardware, installation
and troubleshooting of operating systems
such as DOS, Windows 9x, Windows 2000
and Windows XP. This course prepares students
for the A+ certification exams.

EXPECTED COMPETENCIES

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After completing this course the student should be able to understand the following:
1. About the functions performed by different hardware components of a microcomputer
2. About the three kinds of software and how they relate to one another and to hardware.
3. How the CPU uses primary and secondary storage to manage software.
4. What happens when you first turn on a computer, so that both the hardware and the software are poised to follow your directions.
5. How hardware interacts with the system and how software manages hardware resources.
6. Practical and easy ways to protect hardware and software.
7. Which physical components are on the system board?
8. How the system board transports data, follows programming logic, and coordinates the timing and execution of each processing task.
9. About the recent evolution of several system-board components.
10. How to set the CPU and system bus frequency for the system board.
11. About the types of physical memory housed on the system board and expansion boards.
12. How memory is used by DOS and Windows 9x.
13. How to manage memory using DOS and Windows 9x.
14. How to upgrade the memory in your computer.
15. How data is stored on floppy disks.
16. How to use DOS and Windows commands to manage disks.
17. How to replace or install a disk drive.
18. About removable drives.
19. How data is stored on a hard drive.
20. How to use DOS and Windows commands to manage data on a hard drive.
21. How to identify the various types of hard drives and understand the advantages of each.
22. How to manage a hard drive to optimize its performance.
23. How to install a hard drive.
24. How to use diagnostic software.
25. How to recover lost data on hard drives.
26. How to apply hard drive troubleshooting skills.
27. How to protect yourself, your hardware, and your software while solving computer problems.
28. What tools are needed to support personal computers?
29. How to isolate computer problems and devise a course of action.
30. The importance of good record keeping.
31. How to take a computer apart and put it back together.
32. How to use standard resources on a computer system when installing add - on – devices.
33. How to resolve resource conflicts.
34. How to install a new device on a computer.
35. About keyboards, pointing devices, and video subsystems.
36. About the fundamental working of multimedia technology.
37. About many multimedia standards and how they have helped shape the industry.
38. How to support many multimedia devices, including CD-ROM drives, sound cards, and DVD drivers.
39. How electricity is measured.
40. How to measure the voltage output of the power supply.

41. How to change a power supply.
42. How a computer system can be protected from damaging changes in electrical power.
43. About Windows installations and customizing the Windows environment.
44. How to install and resolve problems with applications software.
45. How to manage Windows resources, including memory and hard drives.
46. About ways to optimize Windows performance.
47. About the Windows registry and how to repair a computed registry.
48. How to use some diagnostic software.
49. About plug and Play and how to troubleshoot Plug and Play problems.
50. About the Windows NT environment and its architecture.
51. About the strength and weaknesses of Windows NT.
52. How to evaluate when Windows NT is the best choice for a PC OS.
53. How to install and customize Windows NT.
54. How to set up a Windows NT environment for a DOS or Windows 3.x application.
55. How to use some Windows NT troubleshooting techniques and tools.
56. About the different operating systems within the Windows 2000 suite.
57. About the differences and similarities among Windows 98, Windows NT, and Windows 2000 Professional.
58. How to install Windows 2000 Professional.
59. About the Windows 2000 boot process, management tools, and problem-solving tools.
60. How to troubleshoot problems with Windows 2000.
61. Some guidelines to use when purchasing a PC.
62. Reasons why you might choose to assemble a PC yourself.
63. How to assemble a PC from separately purchased parts.
64. The basics of how computers communicate with each other.
65. About the problems faced by systems communicating over phone lines.
66. How modems work and what features and protocols modems use.
67. How to configure a modem, using Windows 9x, Windows NT, or Windows 2000
68. The features of different communications software programs and how to use one of the more popular (pcANYWHERE) programs.
69. How to troubleshoot modem operations.
70. About high-speed digital communications lines including ISDN, DSL, and cable modem.
71. About the typical hardware components of a network.
72. How several popular network technologies manage data traffic.
73. How data is transmitted over several interconnected networks.
74. How communications layers and their protocols are used on a network.
75. About many of the popular applications used on a network.
76. How to connect to a network using a modem and a phone line.
77. About the Internet and how to support PCs connected to the Internet.
78. How printers, including laser printers and ink-jet photo-quality printers work.
79. How to support and troubleshoot printers.
80. About the special needs of supporting printers on a network.
81. How Windows 98 supports notebooks and about notebook support new to Windows 2000.
82. About power management features of notebooks.
83. How to support PC cards for notebooks.

84. About preventive maintenance and procedures designed to protect systems.
85. How to develop a preventive maintenance plan.
86. How systems become infected with viruses and other infestations.
87. How viruses work, how to protect systems against them, and how to deal with them when they infect your system.
88. About the strengths and weaknesses of different backup procedures and systems, and how to use backup software.
89. How to make and keep excellent customer relations.
90. How to maintain a successful help desk.
91. How professional organizations and certifications can help you be a better PC technician.
92. About software copyrights and software piracy.
93. About how to stay abreast of new technology.

ASSESSMENT METHODS

Student performance may be assessed by examination, quizzes, case studies, oral reports, group discussion, written reports or presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE

90%-100% = A
80%-89.9%= B
70%-79.9%= C
60%-69.9%= D
<60%   = E