

**Common Course Outline**  
**DCOM 257**  
**Implementing Wireless LANs**  
**4 Semester Hours**

**The Community College of Baltimore County**

**Course Description**

This course is designed to give students direct experience in planning, using, installing, configuring, managing, monitoring, and troubleshooting a wireless LAN. Topics covered include wireless fundamentals, standards, and working with wireless devices. This course includes lab exercises that cover many aspects of how wireless networks function and show how to install and manage a WLAN.

4 credits; 4 lecture hours, 0 laboratory hours required. Prerequisites: DCOM 256 or consent of Program Director

**Course Objectives**

**A. Overall Course Objectives:**

Upon completion of this course the student will be able to:

- A. Identify wireless networking devices
- B. Explain how radio waves can be used to transmit data signals
- C. Identify hardware and software components that make up a wireless local area network (WLAN)
- D. Describe the specifications of the IEEE 802.11 standard
- E. Explain the steps necessary for a WLAN station to join a network
- F. List the steps for planning a network
- G. Install and configure a wireless network card
- H. Install and configure a wireless access point
- I. Describe how to implement wireless security
- J. Tell how to monitor the status of a WLAN
- K. Explain troubleshooting tips for WLANs

**Major Topics**

- 1. Introduction to wireless networking
- 2. Wireless LAN Fundamentals
- 3. IEEE 802.11 Physical Layer Standards
- 4. IEEE 802.11 Medium Access Control and Network Layer Standards
- 5. Building and Securing a WLAN
- 6. Installing an access point
- 7. Installing wireless network cards
- 8. Configuring wireless network cards and access points
- 9. Managing wireless network cards and access points
- 10. Network Settings and Troubleshooting

**Materials:****Textbook**

**Required Textbook:** *Designing and Implementing Wireless LANs*, Mark Ciampa, Course Technology, 2001, ISBN: 0-619-03494-7

**Supplemental Resources:** Materials created by the BFM MAITI – MACC partnership and found on the Global Wireless Educational Consortium (GWEC) website: <http://www.gwec.org/>.

**Equipment needed:**

- Wireless network interface cards
- Wireless Access Points
- Fast Ethernet router with built-in switch and DHCP server
- Fast Ethernet 5 port switch
- Optional Wireless Bridges
- Optional laptop computers with PC card wireless network interface cards