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| <p>نام دوره : متخصص شبکه های بیسیم</p> <p>Certified Wireless Network Administrator</p> | | |
| <p>تعداد ترم : ۱</p> | <p>پیش نیاز : آشنایی با مفاهیم شبکه یا گذراندن دوره Network+</p> | <p>تعداد ساعت : ۴۰</p> |
| <p>مشخصات دوره</p> | | |
| <p>مخاطبین دوره</p> <p>علاقه مندان به بحث شبکه های بیسیم</p> | | |
| <p>شرح دوره</p> <p>دوره CWNA یکی از دوره ها در سطح Administrator می باشد که شما را قادر می سازد علاوه بر راه اندازی و مدیریت شبکه های بی سیم محلی و مفاهیم فرکانس رادیویی (RF)، استانداردهای شبکه های بی سیم و امنیت شبکه بی سیم؛ توانایی های لازم را برای انجام پروژه های بی سیم کسب نمایید</p> <p>این مدرک نشان دهنده کسب دانش فنی متقاضی در درک مفاهیم، راه اندازی و عیب یابی شبکه های Wireless میباشد.</p> | | |
| <p>آنچه در این دوره می آموزیم:</p> <ul style="list-style-type: none"> • آشنایی با تجهیزات Wireless و انواع استاندارد های شبکه بی سیم • بررسی انواع روشها و مدلاسیون مخابره اطلاعات در شبکه های بی سیم • بررسی موج ، سیگنال ، اصول فرکانس • کار با تجهیزات شبکه بی سیم شامل آنتن - Access Point - انواع کانکتور شبکه بی سیم - روشهای نصب • انواع مدلها کارکرد شبکه بی سیم • نصب و پیکربندی شبکه بی سیم • امکان سنجی جهت نصب شبکه بی سیم Site survey برای اتصالات Point to Point • مقایسه شبکه های بی سیم و کابلی • آشنایی با تکنولوژی WIFI • آشنایی با تکنولوژی WIMAX • راه اندازی شبکه های Wireless outdoor و Wireless indoor در محیط های مختلف کاری • عیب یابی ؛ امنیت و طراحی در شبکه های بیسیم | | |
| <p>ترم های دوره</p> <p>CWNA (Certified Wireless Network Administrator) PW0-105</p> | | |

Radio Frequency (RF) Technologies – 21%

1.1. RF Fundamentals

1.1.1. Define and explain the basic concepts of RF behavior

1.2. RF Mathematics

1.2.1. Understand and apply the basic components of RF mathematics

1.3. RF Signal and Antenna Concepts

1.3.1. Identify RF signal characteristics, the applications of basic RF antenna concepts, and the implementation of solutions that require RF antennas

1.3.2. Explain the applications of physical RF antenna and antenna system types and identify their basic attributes, purpose, and function

1.3.3. Describe the proper locations and methods for installing RF antennas

1.4. RF Antenna Accessories

1.4.1. Identify the use of the following WLAN accessories and explain how to select and install them for optimal performance and regulatory domain compliance.

IEEE 802.11 Regulations and Standards – 17%

2.1. Spread Spectrum Technologies

2.1.1. Identify some of the uses for spread spectrum technologies

2.1.2. Comprehend the differences between, and explain the different types of spread spectrum technologies and how they relate to the IEEE 802.11-2007 standard's (as amended and including 802.11n) PHY clauses

2.1.3. Identify the underlying concepts of how spread spectrum technology works

2.1.4. Identify and apply the concepts that make up the functionality of spread spectrum technology

2.2. IEEE 802.11-2007 Standard (as amended and including 802.11k, 802.11r, 802.11n, 802.11y, 802.11w, and 802.11u)

2.2.1. Identify, explain, and apply the basic frame types and frame exchange sequences covered by the IEEE 802.11-2007 standard

2.2.2. Identify and apply regulatory domain requirements

2.2.3. Understand the OSI model layers affected by the 802.11-2007 standard and amendments

2.2.4. Use of ISM, UNII, and licensed bands in Wi-Fi networks

2.2.5. Supported data rates for each IEEE 802.11-2007 (as amended to include 802.11n) PHY

2.2.6. Understand the IEEE standard creation and ratification process and identify IEEE standard naming conventions

2.3. Industry Organizations and Their Roles

2.3.1. Define the roles of the following organizations in providing direction, cohesion, and accountability within the WLAN industry

IEEE 802.11 Protocols and Devices – 17%

3.1. IEEE 802.11 Protocol Architecture

3.1.1. Summarize the processes involved in authentication and association

3.1.2. Define, describe, and apply the following concepts associated with WLAN service sets

3.1.3. Explain and apply the following power management features of WLANs

IEEE 802.11 Network Implementation – 20%

4.1. IEEE 802.11 Network Design, Implementation, and Management

4.1.1. Identify technology roles for which WLAN technology is appropriate and describe implementation of WLAN technology in those roles

4.2. IEEE 802.11 Network Troubleshooting

4.2.1. Identify and explain how to solve the following WLAN implementation challenges using features available in enterprise class WLAN equipment.

4.3. Power over Ethernet (PoE)

4.3.1. IEEE 802.3-2005, Clause 33 (formerly IEEE 802.3af)

4.3.2. Powering HT (802.11n) devices

4.4. WLAN Architectures

4.4.1. Define, describe, and implement autonomous APs

4.4.2. Define, describe, and implement WLAN controllers that use centralized and/or distributed forwarding

4.4.3. Define, describe, and implement distributed WLAN architectures

4.4.4. Define, describe, and implement a WNMS that manages APs and WLAN controllers

4.4.5. Define, describe, and implement a multiple channel architecture (MCA) network model

4.4.6. Define, describe, and implement a single channel architecture (SCA) network model

4.4.7. Define and describe alternative WLAN architectures

4.5. WLAN Deployment Types

4.5.1. Understand WLAN design and deployment considerations for commonly supported WLAN applications and devices

IEEE 802.11 Network Security – 10%

5.1. IEEE 802.11 Network Security Architecture

5.1.1. Identify and describe the strengths, weaknesses, appropriate uses, and implementation of the following IEEE 802.11 security-related items:

5.2. IEEE 802.11 Network Security Analysis, Performance Analysis, and Troubleshooting

5.2.1. Describe, explain, and illustrate the appropriate applications for the following wireless security solutions

5.3. IEEE 802.11 Network Security Policy Basics

5.3.1. Describe the following General Security Policy elements

5.3.2. Describe the following Functional Security Policy elements

IEEE 802.11 RF Site Surveying – 15%

6.1. IEEE 802.11 Network Site Survey Fundamentals

6.1.1. Explain the importance of and the processes involved in information collection for manual and predictive RF site surveys. (These happen in preparation for an RF site survey)

6.1.2. Explain the technical aspects involved in performing manual and predictive RF site surveys. (These happen as part of the RF site survey)

6.2. IEEE 802.11 Network Site Survey Systems and Devices

6.2.1. Identify the equipment, applications, and system features involved in performing predictive site surveys

6.2.2. Identify the equipment, applications, and methodologies involved in performing manual site surveys

6.2.3. Identify the equipment, applications, and methodologies involved in self-managing RF technologies