ELECTRONICS DEPARTMENT – IT CLASSES

Cisco IT Essentials / CompTIA A+

Installing, Configuring & Administering a Microsoft OS

Electronics 121/122/126 (Corequisites)

The CompTIA A+ certification is the first step of your professional IT journey and can propel you toward a rewarding career in cloud computing, networking, mobility, security or systems administration. It's the ideal foundational certification to get started on a career working with cutting-edge information technologies. It covers mobile, tablets, laptops. Desktops and beyond. The exam verifies an individual can troubleshoot networking and security issues within operating systems such as Apple, Android, Windows and Linux. Why CompTIA A+? This industry recognized certification is held by over 1,000,000 IT professionals. Moreover, it's vendor neutral, which means the skills you develop here won't be tied to as specific company or technology; keeping your horizons in IT broad and deep.

This course maps directly to Microsoft's Exam 70-680 & 70-698 Configuring Windows 7 & 10. This course provides students with the technical foundation in current operating system technologies. It covers PC architecture, preventive maintenance, and troubleshooting. It covers operating system installation, configuration, administration and performance optimization. This course also gives students a solid grounding in the fundamentals of computer security like access control, file and folder permissions, auditing and encryption. Students learn how to harden operating systems to repel attacks. This course prepares students to perform operating system support tasks including operating system batch and Windows script file programming. Also, students have access to a NETLAB+ system, a virtual system that allows topology configuration via online, and upon online completion; students physically configure the topology in class.

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CompTIA Network+ – Electronics 125

This course introduces the fundamentals that form a modern computer network, such as protocols, topologies, hardware, network architecture, and network operating systems. In-depth coverage of the most important concepts in contemporary networking includes TCP/IP, Ethernet, wireless transmission, network administration, support, troubleshooting Wide Area Networks (WANs), and security. Students develop the skills to implement the best network topology, hardware, and software for their environment, develop skills to build a network from scratch, and maintain, upgrade, and troubleshoot and existing network.

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Microsoft Server Systems and Network Administration (Domain Controllers) – Electronics 127

This course maps directly to Microsoft Certified Solutions Associate (MCSA) Exam 70-410: Installing and Configuring Windows Server 2012, which is the first of three exams required for MCSA: Windows Server 2012 certification. It covers implementing, managing, maintaining and pro-visioning services and infrastructure in a Windows Server 2012 environment. This course primarily covers the initial implementation and configuration of core services, such as Networking, Storage, Active Directory Domain Services (ADDS), Group Policy, File and Print services, and Hyper-V. Also, students have access to a NETLAB+ system, a virtual system that allows topology configuration via online, and upon online completion; students physically configure the topology in class.

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CompTIA Security+ – Electronics 128

The CompTIA Security+ certification is often the first cybersecurity credential that many IT professionals obtain. To earn this vendor-neutral, entry-level certification, candidates must demonstrate basic cybersecurity knowledge and perform basic security tasks, including configuring, managing and troubleshooting networks. They must also possess the skills necessary to identify threats, detect intrusions and conduct penetration testing, and be well-versed in risk management and mitigation. They'll learn how to handle threats, attacks, and vulnerabilities using industry-standard tools and technologies, while understanding the role of architecture and design. From everyday tasks like identity and access management to complex topics like risk management and cryptography, this course helps them consolidate their knowledge base in preparation for the Security+ exam. Practical examples illustrate how these processes play out in real-world scenarios, allowing them to immediately translate essential concepts to on-the-job application. This certification is ideal for anyone just starting their career as a cybersecurity professional.

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Python for Networking – Electronics 129

In this course students learn topics of the Python language such as data types, variables, control, structures, Python, Objects and Oriented Design, standard and advanced mathematical libraries, tool-chain use and Python Frameworks, user-defined classes and abstract collections, and dictionaries. Also, students have access to NETLAB+ system, a virtual system that allows topology configuration via online, and upon online completion, students physically configure the topology in class.

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Routing & Switching Fundamentals (Cisco CCNA 1 & 2) – Electronics 130

This course is the equivalence to parts one and two of the Cisco Network Academy. Part 1 of this course introduces the architecture, structure, functions, components, and models of the Internet and computer networks. The principles of IP addressing and fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of Part 1, students are able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Part 2 of this course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of Part 2, students are able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Students completing this course prepared to take the Cisco ICND1 and/or CCENT certification exam. Also, students have access to a NETLAB+ system, a virtual system that allows topology con-figuration via online, and upon online completion; students physically configure the topology in class.

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Installing, Configuring & Administering Linux Operating Systems – Electronics 131

Just like Windows, iOS, and Mac OS, Linux is an operating system. In fact, one of the most popular platforms on the planet, Android, is powered by the Linux operating system. An operating system is software that manages all of the hardware resources associated with your desktop or laptop. To put it simply, the operating system manages the communication between your software and your hardware. Without the operating system (OS), the software wouldn't function. This course gives students a solid foundation in the fundamentals of the Linux operating system which plays a crucial role in academic and corporate computing. In fact, Unix/Linux powers more Internet server and corporate networks than Microsoft. The topics include Linux Overview and Architecture, The Kernel and Shell, File System, users and Group Management, Permission and Ownership Management, Services and Processes Management. Students gain system-level experience through problem-solving hands-on lab exercises at the command line and in the graphical user interface. Also, students have access to a NETLAB+ system, a virtual system that allows topology configuration via online, and upon online completion; students physically configure the topology in class.

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Certified Ethical Hacker – Electronics 132

A Certified Ethical Hacker is a skilled professional who understands and knows how to look for weaknesses and vulnerabilities in target systems and uses the same knowledge and tools as a malicious hacker, but in a lawful and legitimate manner to assess the security posture of a target system(s). The CEH credential certifies individuals in the specific network security discipline of Ethical Hacking from a vendor-neutral perspective. This course provides the training and skills needed to pass the Certified Ethical Hacking (CEH) Certification Examination. The course introduces students to the concepts, principles, and techniques, supplemented by hands-on exercises, for attacking and disabling a network within the context of properly securing a network. The course emphasizes network attack methods with the emphasis on student use of network attack techniques and tools and appropriate defenses and countermeasures. Also, students have access to a NETLAB+ system, a virtual system that allows topology configuration via online, and upon online completion; students physically configure the topology in class.

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Amateur (Ham) Radio – Electronics 185 (Temporary Number) – No prerequisite!

Amateur Radio (ham radio) is a popular hobby and service that brings people, electronics and communication together. People use ham radio to talk across town, around the world, or even into space, all without the Internet or cell phones. It's fun, social, educational, and can be a lifeline during times of need. Although Amateur Radio operators get involved for many reasons, they all have in common a basic knowledge of radio technology and operating principles, and pass an examination for the FCC license to operate on radio frequencies known as the "Amateur Bands." These bands are radio frequencies allocated by the Federal Communications Commission (FCC) for use by ham radio operators. This class prepares you to get your FCC Amateur Radio license.

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For more details, check our web page at **electronics.elac.edu** or scan this QR code.