

# COMPUTER SECURITY AND NETWORKING - ASSOCIATE IN SCIENCE

Plan Code: 2125

The degree is designed to provide students with a professional, current, and strategically designed set of classes to secure entry level employment in IT, networking, wireless, and security administration or to benefit them in the transfer to related four-year degree program.

## Program Student Learning Outcomes

- Demonstrate the ability to attain the Institutional Student Learning Outcomes (ISLOs).
- Install, configure, manage and troubleshoot a small office or home office network (wired or wireless).
- Secure wired and wireless networks.
- Install, configure and manage client and server operating systems.
- Harden servers against intrusion.

## Program Requirements

This degree requires the completion of General Education coursework plus the following:

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
BCOM 15	Business Communications	3
COSA 50	Intro to IT Concepts and Applications	4
COSN 5	Computer Hardware Fundamentals	4
COSN 10	Networking Fundamentals	3
COSN 205	UNIX/LINUX Fundamentals	4
COSN 225	Microsoft Windows Client	3
COSN 299	Security and Networking Capstone	4
COSS 71	Network Security Fundamentals	3
<b>Subtotal Units</b>		<b>28</b>
IN ADDITION, complete ONE (1) course from the following:		
BCOM 222	Career Development for Tech Professions (3)	
COSA 210	Intro to Project Management for IT (3)	
COSE 271WE	Work Experience-Comp & Office Studies (1-4)	
COSN 200	Wireless and Mobile Devices (3)	
COSN 210	LINUX Server Administration (4)	
COSN 215	LINUX Networking and Security (4)	
COSN 230	Microsoft Windows Server (4)	
COSN 250	Cloud Computing in Amazon Web Services (3)	
COSP 8	Visual Basic Programming (4)	
COSS 272	Computer Forensics and Investigation (3)	
COSS 273	Ethical Hacking and Countermeasures (4)	
CS 11	Introduction to Computer Science- C++ (3)	
CS 21	Introduction to Computer Science-Java (3)	
<b>Subtotal Units</b>		<b>1-4</b>

<b>Required Subtotal</b>	<b>29-32</b>
Complete one of the following: <sup>1</sup>	19-39
LBCC General Education (Plan A) ( <a href="https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-a/">https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-a/</a> )	
CSU GE Breadth (Plan B) ( <a href="https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-b/">https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-b/</a> )	
IGETC Pattern (Plan C) ( <a href="https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-c/">https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-c/</a> )	
Electives (as needed to reach 60 degree-applicable units) <sup>2</sup>	
<b>Minimum Degree Total</b>	<b>60</b>

<sup>1</sup> Units for the major may be double-counted for LBCC GE, CSU GE, or IGETC; see counselor for limitations.

<sup>2</sup> Elective units from course(s) numbered 1-599, if needed, to reach 60 degree-applicable units.

# COMPUTER SECURITY AND NETWORKING - CERTIFICATE OF ACHIEVEMENT

Plan Code: 3125

This program provides learners with the necessary skills to enter the Computer Networking and Security field.

## Program Student Learning Outcomes

- Install, configure, manage, and troubleshoot a small office/home office network (wired or wireless).
- Secure wired and wireless networks.
- Install, configure, and manage client and server operating systems.
- Harden servers against intrusion.

## Program Requirements

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
BCOM 15	Business Communications	3
COSA 50	Intro to IT Concepts and Applications	4
COSN 5	Computer Hardware Fundamentals	4
COSN 10	Networking Fundamentals	3
COSN 205	UNIX/LINUX Fundamentals	4
COSN 225	Microsoft Windows Client	3
COSN 299	Security and Networking Capstone	4
COSS 71	Network Security Fundamentals	3
<b>Subtotal Units</b>		<b>28</b>
IN ADDITION, complete ONE (1) course from the following:		
BCOM 222	Career Development for Tech Professions (3)	
COSA 210	Intro to Project Management for IT (3)	
COSE 271WE	Work Experience-Comp & Office Studies (1-4)	
COSN 200	Wireless and Mobile Devices (3)	
COSN 210	LINUX Server Administration (4)	
COSN 215	LINUX Networking and Security (4)	
COSN 230	Microsoft Windows Server (4)	
COSN 250	Cloud Computing in Amazon Web Services (3)	
COSP 8	Visual Basic Programming (4)	
COSS 272	Computer Forensics and Investigation (3)	
COSS 273	Ethical Hacking and Countermeasures (4)	
CS 11	Introduction to Computer Science- C++ (3)	
CS 21	Introduction to Computer Science-Java (3)	
<b>Subtotal Units</b>		<b>1-4</b>
<b>Total Units</b>		<b>29-32</b>

# MICROSOFT WINDOWS NETWORKING TECHNICIAN - CERTIFICATE OF ACHIEVEMENT

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**Plan Code: 3137**

This certificate verifies solid foundational skills managing, configuring, and securing a Windows network environment and prepares students for entry level work as a Microsoft administrator.

## Program Student Learning Outcomes

- Demonstrate the ability to set up and construct a secure peer-to-peer and client server network.
- Recognize and comprehend operating system configurations.
- Recognize and comprehend server roles.

## Program Requirements

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
COSN 5	Computer Hardware Fundamentals	4
COSN 10	Networking Fundamentals	3
COSN 225	Microsoft Windows Client	3
COSN 230	Microsoft Windows Server	4
<b>Total Units</b>		<b>14</b>

# COMPUTER HARDWARE TECHNICIAN - CERTIFICATE OF ACHIEVEMENT

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Plan Code: 3133

This program is designed to provide students with the fundamentals of computer hardware, operating systems, computer networking infrastructures, and the certification process. This Certificate will prepare students to pursue entry-level employment in computer technical support or network administration positions.

## Program Student Learning Outcomes

- Analyze common software and hardware problems on personal computers.
- Distinguish and explain the introductory core computer and IT concepts and technology that are used personally, in society, in government, and in business.

## Program Requirements

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
COSA 50	Intro to IT Concepts and Applications	4
COSN 5	Computer Hardware Fundamentals	4
<b>Total Units</b>		<b>8</b>

# UNIX NETWORK ADMINISTRATOR - CERTIFICATE OF ACHIEVEMENT

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Plan Code: 3139

This certificate prepares students with no prior experience for an entry-level job installing, configuring, and securing a UNIX/LINUX network server.

## Program Student Learning Outcomes

- Demonstrate the ability to install, configure, and secure a Linux server.
- Demonstrate the ability to install, configure and secure a Linux network and services.
- Demonstrate the ability to describe and document a Linux network in relation to the OSI model.

## Program Requirements

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
COSN 10	Networking Fundamentals	3
COSN 205	UNIX/LINUX Fundamentals	4
COSN 210	LINUX Server Administration	4
COSN 215	LINUX Networking and Security	4
<b>Total Units</b>		<b>15</b>