

INFORMATION TECHNOLOGY CYBERSECURITY

Curriculum Guide for Academic Year 2021-2022

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Students planning to **transfer** to a four-year college or university should refer to the ASSIST web site at www.assist.org and **consult a counselor** before beginning a program of study. Please call (562)938-4561 (LAC) or (562) 938-3920 (PCC) to schedule a counseling appointment. Students may also wish to visit the Transfer Center on either campus.

Program of study leading to: Associate in Science (A.S.) Degree				
INFORMATION TECHNOLOGY CYBERSECURITY REQUIRED COURSES:		UNITS	In Progress	Completed Grade
COSN 5	Computer Hardware Fundamentals	4		
COSN 10	Networking Fundamentals	3		
COSN 205	UNIX/LINUX Fundamentals	4		
COSN 206	Scripting Fundamentals	3		
COSN 230	Computer Hardware Fundamentals	4		
COSN 253	Security in Amazon Web Services	3		
COSS 271	Networking Security Fundamentals	3		
COSS 272	Computer Forensics and Investigation	3		
COSS 273	Ethical Hacking and Countermeasures	4		
TOTAL UNITS		27		

For graduation with an **Associate in Science (A.S.) Degree with a major in Information Technology Cybersecurity:**

- Minimum Unit Requirements:** Any course that appears on a curriculum guide and the General Education Pattern (Plan A) may fulfill both major and general education requirements (Approved by College Curriculum Committee Spring 2012). For this degree, complete a minimum of 60 units in courses numbered 1-599. Please note that additional elective units may be required to meet this minimum based upon courses selected to fulfill General Education for the Associate Degree.

Information Technology Cybersecurity Major:	27 Units
General Education §	19 Units
Degree Total	60 Units
- Scholarship:** Maintain an **overall grade point average (GPA) of 2.0** ("C" average) based on all accredited college work applied to the degree, no matter where completed. For this **field of concentration, complete each course above with a grade of "C" or higher**, or "P" if course is graded on a P/NP basis.
- Residence for the Degree:** Complete at least 12 semester units of the required 60 semester units in residence at
- Long Beach City College in order for the college to grant an Associate of Arts and/or an Associate of Science Degree.
- Residence for the Field of Concentration:** Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 13.5 units** of the required 27 units. Credit earned by exam, where applicable, may be included.
- General Education and Proficiency Requirements:** Complete the required A.A./A.S. General Education and Proficiency requirements*, otherwise known as "Plan A". For Plan A requirements, refer to the general catalog or view it online at <http://osca.lbcc.edu>.
- Complete and submit the degree application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu>. Refer to the Schedule of Classes (<http://schedule.lbcc.edu>) and click the "Important Dates" link to view the actual deadline for each semester.

*The requirements for general education/proficiency and the field of concentration (major) need to be from the same catalog year. This catalog year may be any year between the years of initial enrollment to the present, provided continuous enrollment is maintained throughout. See the catalog for definition of "continuous enrollment".

Program of study leading to:
Certificates of Achievement – Information Cyber Security

<u>CYBER SECURITY REQUIRED COURSES</u>		UNITS	In Progress	Completed Grade
COSN 5	Computer Hardware Fundamentals	4		
COSN 10	Networking Fundamentals	3		
COSN 271	Network Security Fundamentals	3		
COSN 272	Computer Forensics and Investigation	3		
COSN 273	Ethical Hacking and Countermeasures	4		
TOTAL UNITS		17		

For graduation with an **Cyber Security Certificate of Achievement**:

1. Complete each of the **REQUIRED COURSES** listed above with a **minimum grade of "C"**, or better, or "P" if course is graded on a P/NP basis.
2. Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means: For the Certificate, complete at **least 8.5 units** of the required 17 at **Long Beach City College**. Credit earned by exam, where applicable, may be included.

Complete and submit the certificate application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu/>. Refer to the Schedule of Classes (<http://schedule.lbcc.edu>) and click the "Important Dates" link to view the actual deadline for each semester.

Program of study leading to:
Certificates of Achievement – Information Technology

<u>CYBER SECURITY REQUIRED COURSES</u>		UNITS	In Progress	Completed Grade
COSN 5	Computer Hardware Fundamentals	4		
COSN 10	Networking Fundamentals	3		
COSN 205	UNIX/LINUX Fundamentals	4		
COSN 206	Scripting Fundamentals	3		
COSN 253	Security in Amazon Web Services	3		
COSN 271	Network Security Fundamentals	3		
COSN 272	Computer Forensics and Investigation	3		
COSN 273	Ethical Hacking and Countermeasures	4		
TOTAL UNITS		27		

For graduation with an **Information Technology Certificate of Achievement**:

1. Complete each of the **REQUIRED COURSES** listed above with a **minimum grade of "C"**, or better, or "P" if course is graded on a P/NP basis.
2. Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means: For the Certificate, complete at **least 13.5 units** of the required 27 at **Long Beach City College**. Credit earned by exam, where applicable, may be included.

Complete and submit the certificate application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu/>. Refer to the Schedule of Classes (<http://schedule.lbcc.edu>) and click the "Important Dates" link to view the actual deadline for each semester.

Career Opportunities

This **Associate Degree or Certificate of Achievement** is a two-year program leading to the Associate in Science (A.S.) degree. It is designed to prepare students for employment in a variety of computer related fields. Students wishing a bachelor's degree (transfer program) should meet with a counselor to discuss transferability of courses.

Program Mission and Outcomes

The Information Technology Cybersecurity program combines systems administration fundamentals with the requisite security concepts and effective practices required to implement, administer, and harden operating systems.

Outcomes: -

- Demonstrate the ability to install, configure, manage and troubleshoot a small office or home office network (wired or wireless).
- Demonstrate the ability to secure wired and wireless networks.
- Demonstrate the ability to install, configure and manage client and server operating systems.
- Demonstrate the ability to harden servers against intrusion.

Outcomes for Certificate of Achievement (Cybersecurity):

- Demonstrate the ability to install, configure, manage and troubleshoot a small office or home office network (wired or wireless).
- Demonstrate the ability to secure wired and wireless networks.
- Demonstrate the ability to install, configure and manage client and server operating systems.
- Demonstrate the ability to harden servers against intrusion.

Legend

† This course has a prerequisite. Prerequisite courses must be complete with at least a “C” or “P” grade. Refer to the General Catalog (<http://www.lbcc.edu/cat/index.html>), the Schedule of Classes (<http://schedule.lbcc.edu/>), or the online Credit Course Outline (<http://wdb-asir.lbcc.edu/coursecurriculum/coursedetails/>) for specific prerequisite information.