

Lakeland

COMMUNITY COLLEGE

PROGRAM GUIDE

Applied Studies Division

Network Infrastructure Engineering Technology

- Network Infrastructure Concentration
- Cisco Infrastructure Concentration
- Microsoft Infrastructure Concentration

 Opportunity
starts **HERE**
lakelandcc.edu

Network Infrastructure Engineering Technology



Lakeland's Associate Degree Program in Network Infrastructure Technology prepares students to work as network technicians, digital communications equipment technicians, network service technicians, digital communication equipment technicians, and positions related to data, security, configuring/programming systems, and much more.



Career Opportunities

Employment of network and computer systems administrators is projected to grow eight percent through 2024.*

*Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2016-17 Edition*, Network and Computer Systems Administrators, on the internet at <http://www.bls.gov/ooh/computer-and-information-technology/network-and-computer-systems-administrators.htm> (visited Aug. 19, 2016).

Lakeland's Program

Students will receive a broad background in mathematics, physics, technical communications, electronics, digital electronics, and PC operating systems specializing in Cisco, Microsoft or programming/configuring systems.

Lakeland's network infrastructure engineering technology degree offers three program concentrations:

Network Infrastructure Security

This concentration blends networking technology and information systems coursework. It emphasizes secure configuration of both operation systems and network infrastructures. Topics include Microsoft Windows together with Linux/Unix management and security, as well as network security via Cisco Academy training. Information assurance and secure network design will be stressed.

Cisco Network Infrastructure

This concentration combines an in-depth program of networking technology together with electrical circuits, computer hardware, and applied programming. Emphasis is on professional-level Cisco certification.

Microsoft Infrastructure Concentration

This concentration features a combination of operating-system instruction together with electric circuits, microprocessors, digital systems, and applied programming. Emphasis is on professional-level Microsoft certification.

The Lakeland Advantage

- Expert classroom instruction and hands-on training using state-of-the-art equipment and the latest industry-standard software.
- Graduates will be able to design, install, operate and troubleshoot the physical layer of a network or a digital communications system including the applied programming of those systems.
- Students will save on tuition when they transfer Lakeland credits to area bachelor's degree programs.

Certificates

Earning certificates are short-range goals for students who would like to add on an additional certification in network infrastructure engineering technology or for those hold other degrees and would like to add to their skillset.

- Microsoft Networking Certificate
- Network Infrastructure Security Certificate

Lakeland Community College Admission Requirements

For admission into Lakeland, students must be a high school graduate or have obtained a high school diploma equivalency. Please consult Lakeland Community College's Enrollment Guide (available on Lakeland's website at lakelandcc.edu/enrollment) for specific admissions requirements and procedures.

For more information

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Network Infrastructure Engineering Technology
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Network Infrastructure Security Concentration (9438)

First Semester:

COMM 1050*	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	3
ENGL 1110**	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
ITIS 1030	Security Awareness	1
Choose course(s) from the Social and Behavioral Sciences Electives list		3
(1st 8 weeks)		
CNET 1100	Cisco Networking Technology I	2
ENGR 1000	Introduction to Engineering Technology	2
(2nd 8 weeks)		
CNET 1200	Cisco Networking Technology II	2
ITON 1011	Comparative Analysis of Microcomputer Operating Systems	2
		18

Second Semester:

ENGL 1121	English Composition II - Technical Focus	3
ITON 1748	Linux Administration I	3
Choose course(s) from the Arts and Humanities Electives list		3
(1st 8 weeks)		
CNET 1300	Cisco Networking Technology III	2
ITON 2050	Windows 7 Configuration	2
OR		
ITON 2070	Configuring Windows Devices	
(2nd 8 weeks)		
CNET 1400	Cisco Networking Technology IV	2
ITON 2240	Installing and Configuring Windows Server 2012	2
		17

Third Semester:

CNET 2720	Cisco Network Security I: Managing Security	3
ITIS 1355	Security+ and Security Essentials	3
MATH 1650	College Algebra	4
(1st 8 weeks)		
ITON 2241	Administering Windows Server 2012	2
(2nd 8 weeks)		
ITON 2242	Configuring Advanced Windows Server 2012 Services	2
		14

Fourth Semester:

ITIS 2355	Security Investigation and Penetration Studies	3
ITON 2768	Linux Administration III	3
MATH 1550	Statistics	4
PHYS 1610	General Physics I	5
		15
		Program Total: 64

*Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150



Cisco Network Infrastructure Concentration (9428)

NOTE: CPET 1050 has a prerequisite of prior exposure to applied technologies or successful completion of the CIM or ET Tech Prep programs. Students can take CIMN 0970 Introduction to Electrical Devices and Controls to gain the required knowledge and experience, if necessary. Students with prior experience should contact the Mathematics, Engineering Technologies, Natural & Social Sciences Office to schedule the proficiency exam for CIMN 0970.

First Semester:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
MATH 1101	Technical Mathematics I	4
PHYS 1100	Applied Physics I	3
(1st 8 weeks)		
CNET 1100	Cisco Networking Technology I	2
ENGR 1000	Introduction to Engineering Technology	2
(2nd 8 weeks)		
CNET 1200	Cisco Networking Technology II	2
		17

Second Semester:

CNET 1050	Voice and Data Cabling	2
ENGL 1121	English Composition II - Technical Focus	3
MATH 1201	Technical Mathematics II	4
PHYS 1200	Applied Physics II	3
(1st 8 weeks)		
CNET 1300	Cisco Networking Technology III	2
(2nd 8 weeks)		
CNET 1400	Cisco Networking Technology IV	2
		16

Third Semester:

CNET 2520	Cisco Networking V: Advanced Routing	3
COMM 1050**	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
CPET 1050	Assembling, Upgrading and Repairing Personal Computers	2
CPET 1120	C Programming for Engineering Technology	3
ELEC 1120	Direct Current Circuit Analysis	2
ITIS 1030	Security Awareness	1
Choose course(s) from the Technical Electives list.		3
		16

Fourth Semester:

CNET 2560	Cisco Networking Technology VII: Multi-layer Switching	3
CPET 2050	Advanced Assembly and Repair of Personal Computers	2
Choose course(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the Social and Behavioral Sciences Electives list.		3
(1st 8 weeks)		
CPET 1200	Visual Basic for Engineering Technology I	2
(2nd 8 weeks)		
CPET 2200	Visual Basic for Engineering Technology II	2
		15

Program Total: 64

*English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).

**Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.

Technical Electives: minimum 3 credits

CNET 2720	Cisco Network Security I: Managing Security	3
ELEC 2821	Programmable Logic Controllers	3
ITIS 1355	Security+ and Security Essentials	3
ITON 1070	Operating Systems: Skills and Techniques	1
OR		
ITON 1011	Comparative Analysis of Microcomputer Operating Systems	2
ITON 2050	Windows 7 Configuration	2
OR		
ITON 2070	Configuring Windows Devices	2

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150



Microsoft Network Infrastructure Concentration (9427)

First Semester:

ELEC 1120.....	Direct Current Circuit Analysis	2
ENGL 1110*.....	English Composition I (A).....	3
OR		
ENGL 1111.....	English Composition I (B).....	
FYEX 1000.....	First Year Experience.....	1
MATH 1101.....	Technical Mathematics I.....	4
PHYS 1100.....	Applied Physics I.....	3
(1st 8 weeks)		
ENGR 1000.....	Introduction to Engineering Technology.....	2
(2nd 8 weeks)		
ITON 1070.....	Operating Systems: Skills and Techniques.....	1
ITON 1205.....	Network+ and Networking Essentials.....	2
		18

Second Semester:

COMM 1050**.....	Fundamentals of Public Speaking.....	2
OR		
COMM 1150.....	Fundamentals of Interpersonal Communication.....	
ELEC 1330.....	Digital Systems Fundamentals.....	2
ENGL 1121.....	English Composition II - Technical Focus.....	3
ITIS 1030.....	Security Awareness.....	1
PHYS 1200.....	Applied Physics II.....	3
(1st 8 weeks)		
ITON 2050.....	Windows 7 Configuration.....	2
OR		
ITON 2070.....	Configuring Windows Devices.....	
(2nd 8 weeks)		
ITON 2240.....	Installing and Configuring Windows Server 2012.....	2
		15

Third Semester:

CPET 1120.....	C Programming for Engineering Technology.....	3
ITIS 1355.....	Security+ and Security Essentials.....	3
MATH 1201.....	Technical Mathematics II.....	4
(1st 8 weeks)		
CNET 1100.....	Cisco Networking Technology I.....	2
ITON 2241.....	Administering Windows Server 2012.....	2
(2nd 8 weeks)		
CNET 1200.....	Cisco Networking Technology II.....	2
ITON 2242.....	Configuring Advanced Windows Server 2012 Services.....	2
		18

Fourth Semester:

CPET 1200.....	Visual Basic for Engineering Technology I.....	2
ELEC 2420.....	Microcontroller Applications.....	2
ELEC 2460.....	Digital Systems and Microcontroller Laboratory.....	1
Choose course(s) from the Arts and Humanities Electives list.....		
Choose course(s) from the Social and Behavioral Sciences Electives list.....		
(1st 8 weeks)		
CNET 1300.....	Cisco Networking Technology III.....	2
(2nd 8 weeks)		
CNET 1400.....	Cisco Networking Technology IV.....	2
		15
Program Total: 66		

*English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).

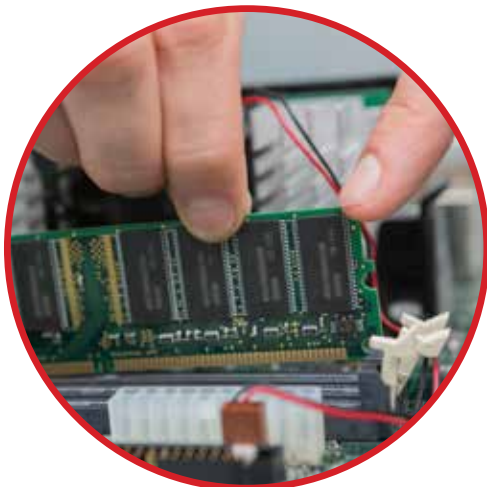
**Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300,



Network Infrastructure/Security Certificates

- Microsoft Networking (listed under Information Technology and Computer Science Certificates)
- Network Infrastructure Security Specialist

Network Infrastructure Security Certificate (4254)

CNET 1100	.....Cisco Networking Technology I	.....2
CNET 1200	.....Cisco Networking Technology II	.....2
CNET 1300	.....Cisco Networking Technology III	.....2
CNET 1400	.....Cisco Networking Technology IV	.....2
CNET 2720	.....Cisco Network Security I: Managing Security	.....3
ENGR 1000	.....Introduction to Engineering Technology	.....2
ITIS 1355	.....Security+ and Security Essentials	.....3
ITIS 2355	.....Security Investigation and Penetration Studies	.....3
ITON 1011	.....Comparative Analysis of Microcomputer Operating Systems2	.....3
ITON 1748	.....Linux Administration I	.....3
ITON 2050	.....Windows 7 Configuration	.....2
OR		
ITON 2070	.....Configuring Windows Devices	

Certificate Total: 26

For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit lkn.lakelandcc.edu/go/ge/?g=4254.


To further your education, Lakeland's Holden University Center offers a variety of bachelor's degree programs from a number of four-year colleges and universities offering you the opportunity to *stay here and go far!* Visit lakelandcc.edu/uc to explore your options.




Network Infrastructure Engineering Technology



Curriculum and program requirements are subject to change. Find the most up-to-date information in the college catalog, available on the website at lakelandcc.edu.

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- Quality Education**
Lakeland prepares you for a high-demand career or for transfer to a four-year college or university. Professors at Lakeland are experts in their fields with real-world experience. Small class sizes allow for personalized attention.
 - Affordable Tuition**
Save thousands on your college education. Lakeland's tuition is about one-third the cost of most four-year schools. Financial assistance is available, including federal and state grants, scholarships, loans, and work study employment.
 - Convenience**
Lakeland offers convenient day, evening and weekend class times, and a growing number of online courses. The main campus in Kirtland is only 20 miles northeast of Cleveland. Classes are also offered in Madison.
 - Focus on Students**
Lakeland offers a variety of student services to help you succeed, such as counseling, tutoring, wireless computer labs, career services, free parking, and affordable child care.

Accreditation

Lakeland Community College is accredited through the Higher Learning Commission (HLC) and participates in the Academic Quality Improvement Program (AQIP). The Higher Learning Commission, 230 South LaSalle Street, Suite 7-500, Chicago, IL 60604-1413, phone: 800.621.7440, hlcommission.org.

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