

NETWORKING SYSTEMS AND TECHNOLOGY, ASSOCIATE IN APPLIED SCIENCE



College(s): DA, KK, OH, TR, WR

Program Code: 0141

This program is for students interested in administering and maintaining network equipment as well as software and services common in modern network infrastructures. Curriculum covers both hardware and software components. It also offers students relevant skills required in a variety of industry certifications including A+, Network+, CCENT, CCNA, and CCNA Security.

Program Requirements

| Code | Title | Hours |
|--|---------------------------------|-------|
| General Education Coursework ¹ | | |
| ENGLISH 101 | Composition | 3 |
| Mathematics (MATH 125 recommended) | | 4 |
| Fine Arts or Humanities course | | 3 |
| Social and Behavioral Sciences course | | 3 |
| Physical Sciences or Life Sciences course | | 3 |
| Required Program Core | | |
| BUSINES 111 | Introduction To Business | 3 |
| CIS 101 | Computer Science 101 | 3 |
| CIS 111 | Computer Operations | 3 |
| CIS 116 | Operating System I | 3 |
| CIS 255 | Operating Systems II | 3 |
| COMPSFI 102 | Information Security Essentials | 3 |
| NET TEC 121 | Internetworking I | 3 |
| NET TEC 122 | Internetworking II | 3 |
| NET TEC 221 | Internetworking III | 3 |
| NET TEC 222 | Internetworking IV | 3 |

or NET TEC 245 Cloud Computing and Services

| | | |
|-------------|----------------------------|---|
| NET TEC 240 | Operating Systems/Server I | 3 |
|-------------|----------------------------|---|

Required Work-Based Learning Courses

| | | |
|------------|--|---|
| CIS 260 | Computer Information Systems Field Project | 3 |
| or CIS 265 | Computer Information Systems Internship | |

Program Electives

| | |
|--|---|
| Students must complete a minimum of 9 credit hours in the subjects Computer Information Systems (0032), Networking Technologies (0165), or Cybersecurity (0162). | 9 |
|--|---|

| | |
|--------------------|-----------|
| Total Hours | 61 |
|--------------------|-----------|

¹ At least one course must be an HD course.

Pathway

This is an **example course sequence** for students interested in earning a degree in Networking Systems and Technology. If this pathway is followed as outlined, you will earn a Basic Certificate (BC), an Advanced Certificate (AC), and an Associate in Applied Science (AAS) Degree in Networking Systems and Technology. It does not represent a contract, nor does it guarantee course availability. One course will satisfy the Human Diversity (HD) requirement, and is labeled with an (HD) in the sequence below.

The Networking Systems and Technology AAS program is for students interested in administering and maintaining network equipment such as routers, switches, and servers, as well as, maintaining software and services that are common in modern network infrastructures. The curriculum covers both hardware and software components which help prepare students for jobs in the Information Technology (IT) market. It also offers students relevant knowledge and skills required in a variety of industry certifications including: A+, Network+, CCENT, CCNA and CCNA Security.

Semester-by-Semester Program Plan for Full-Time Students

All plans can be modified to fit the needs of part-time students by adding more semesters.

| Semester 1 | | Hours |
|--|---|-----------|
| ENGLISH 101 | Composition ¹ | 3 |
| CIS 101 | Computer Science 101 | 3 |
| CIS 116 | Operating System I | 3 |
| CIS 111 | Computer Operations | 3 |
| NET TEC 121 | Internetworking I | 3 |
| Hours | | 15 |
| Semester 2 | | Hours |
| BUSINES 111 | Introduction To Business | 3 |
| CIS 255 | Operating Systems II | 3 |
| MATH 125 | Introductory Statistics (or other Mathematics) | 4 |
| NET TEC 122 | Internetworking II | 3 |
| Fine Arts & Humanities course (HD) ¹ | | 3 |
| Hours | | 16 |
| Semester 3 | | Hours |
| COMPSFI 102 | Information Security Essentials | 3 |
| NET TEC 221 | Internetworking III | 3 |
| NET TEC 240 | Operating Systems/Server I | 3 |
| Physical Sciences or Life Sciences course ¹ | | 3 |
| Program Elective ² | | 3 |
| Hours | | 15 |
| Semester 4 | | Hours |
| NET TEC 222 or NET TEC 245 | Internetworking IV or Cloud Computing and Services | 3 |
| CIS 260 or CIS 265 | Computer Information Systems Field Project (Capstone or Internship) or Computer Information Systems Internship | 3 |
| Social and Behavioral Sciences course ¹ | | 3 |
| Program Elective ² | | 3 |
| Program Elective ² | | 3 |
| Hours | | 15 |
| Total Hours | | 61 |

¹ General Education Requirement

² Students must complete a minimum of 9 credit hours in the subjects Computer Information Systems (0032) (<https://catalog.ccc.edu/courses-az/cis/>), Networking Technologies (0165) (https://catalog.ccc.edu/courses-az/net_tec/), or Cybersecurity (0162) (<https://catalog.ccc.edu/courses-az/compsfi/>).

Choose your courses with your College Advisor.

Careers

This program can prepare students for the jobs listed below. Click on each one to learn more, including average earnings, annual job openings, and how much education people in that field have. For additional guidance and resources on career options, current City Colleges students and alumni can contact the Career Services Office (<https://www.ccc.edu/departments/Pages/Career-Services.aspx>).

Computer User Support Specialists Job Description

Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, via telephone, or

electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.

Salary Based on Experience Level

Take a look at the average hourly/annual earnings for this career in Cook County

Lightcast earnings figures are based on OES data from the BLS and include base rate, cost of living allowances, guaranteed pay, hazardous-duty pay, incentive pay (including commissions and bonuses), on-call pay, and tips.

Annual Wages

| | |
|--|-----------|
| Entry-Level 10 th Percentile | \$40,255 |
| Median 50 th Percentile | \$62,296 |
| Senior-Level 90 th Percentile | \$101,465 |

Hourly Wages

| | |
|--|------|
| Entry-Level 10 th Percentile | \$19 |
| Median 50 th Percentile | \$30 |
| Senior-Level 90 th Percentile | \$49 |

Annual Job Openings

750 annual openings in Cook County

National Education Attainment

Here, you can see the level of education that people in this career complete.

| Degree Program | % of Jobs |
|-----------------------------------|-----------|
| A high school diploma or less | 0.32% |
| A certificate | 32.33% |
| Some college | 1.92% |
| An Associate degree | 13.74% |
| A Bachelor's degree | 47.32% |
| A Master's or Professional degree | 4.37% |
| A Doctoral degree or more | 0.00% |

51.69% continue their education beyond an associate degree

Computer Network Support Specialists Job Description

Analyze, test, troubleshoot, and evaluate existing network systems, such as local area networks (LAN), wide area networks (WAN), cloud networks, servers, and other data communications networks. Perform network maintenance to ensure networks operate correctly with minimal interruption.

Salary Based on Experience Level

Take a look at the average hourly/annual earnings for this career in Cook County

Lightcast earnings figures are based on OES data from the BLS and include base rate, cost of living allowances, guaranteed pay, hazardous-

duty pay, incentive pay (including commissions and bonuses), on-call pay, and tips.

Annual Wages

| | |
|--|-----------|
| Entry-Level 10 th Percentile | \$49,197 |
| Median 50 th Percentile | \$77,700 |
| Senior-Level 90 th Percentile | \$137,289 |

Hourly Wages

| | |
|--|------|
| Entry-Level 10 th Percentile | \$24 |
| Median 50 th Percentile | \$37 |
| Senior-Level 90 th Percentile | \$66 |

Annual Job Openings

272 annual openings in Cook County

National Education Attainment

Here, you can see the level of education that people in this career complete.

| Degree Program | % of Jobs |
|-----------------------------------|-----------|
| A high school diploma or less | 4.23% |
| A certificate | 10.16% |
| Some college | 13.63% |
| An Associate degree | 21.68% |
| A Bachelor's degree | 48.77% |
| A Master's or Professional degree | 1.53% |
| A Doctoral degree or more | 0.00% |

50.30% continue their education beyond an associate degree

Network and Computer Systems Administrators

Job Description

Install, configure, and maintain an organization's local area network (LAN), wide area network (WAN), data communications network, operating systems, and physical and virtual servers. Perform system monitoring and verify the integrity and availability of hardware, network, and server resources and systems. Review system and application logs and verify completion of scheduled jobs, including system backups. Analyze network and server resource consumption and control user access. Install and upgrade software and maintain software licenses. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software.

Salary Based on Experience Level

Take a look at the average hourly/annual earnings for this career in Cook County

Lightcast earnings figures are based on OES data from the BLS and include base rate, cost of living allowances, guaranteed pay, hazardous-duty pay, incentive pay (including commissions and bonuses), on-call pay, and tips.

Annual Wages

| | |
|--|-----------|
| Entry-Level 10 th Percentile | \$65,878 |
| Median 50 th Percentile | \$99,986 |
| Senior-Level 90 th Percentile | \$144,995 |

Hourly Wages

| | |
|--|------|
| Entry-Level 10 th Percentile | \$32 |
| Median 50 th Percentile | \$48 |
| Senior-Level 90 th Percentile | \$70 |

Annual Job Openings

244 annual openings in Cook County

National Education Attainment

Here, you can see the level of education that people in this career complete.

| Degree Program | % of Jobs |
|-----------------------------------|-----------|
| A high school diploma or less | 0.00% |
| A certificate | 7.49% |
| Some college | 9.72% |
| An Associate degree | 20.30% |
| A Bachelor's degree | 52.37% |
| A Master's or Professional degree | 10.13% |
| A Doctoral degree or more | 0.00% |

62.50% continue their education beyond an associate degree

Information Security Analysts

Job Description

Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. Assess system vulnerabilities for security risks and propose and implement risk mitigation strategies. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.

Salary Based on Experience Level

Take a look at the average hourly/annual earnings for this career in Cook County

Lightcast earnings figures are based on OES data from the BLS and include base rate, cost of living allowances, guaranteed pay, hazardous-duty pay, incentive pay (including commissions and bonuses), on-call pay, and tips.

Annual Wages

| | |
|--|-----------|
| Entry-Level 10 th Percentile | \$70,243 |
| Median 50 th Percentile | \$121,181 |
| Senior-Level 90 th Percentile | \$183,449 |

Hourly Wages

| | |
|--|------|
| Entry-Level 10 th Percentile | \$34 |
| Median 50 th Percentile | \$58 |
| Senior-Level 90 th Percentile | \$88 |

Annual Job Openings

156 annual openings in Cook County

National Education Attainment

Here, you can see the level of education that people in this career complete.

| Degree Program | % of Jobs |
|-----------------------------------|-----------|
| A high school diploma or less | 0.00% |
| A certificate | 7.16% |
| Some college | 2.01% |
| An Associate degree | 12.87% |
| A Bachelor's degree | 75.16% |
| A Master's or Professional degree | 2.80% |
| A Doctoral degree or more | 0.00% |

77.96% continue their education beyond an associate degree