

# Computer Network Engineering AAS DEGREE

## Program Overview

Networking Specialists can work in a wide variety of jobs. The work could include purchasing, installing, configuring, administrating and/or supporting. Some jobs in networking could include computer network support, user training, installing and maintaining local and/or wide area networks.

The student should have excellent communication and math skills. For the certificate programs, the student is expected to have prior microcomputer and/or networking experience. He/she should exhibit qualities of patience, perseverance and preciseness and be a logical thinker. The student should enjoy working in a team environment and be able to work independently.

## Career Opportunities

With almost every size company connected to some type of network, the jobs in networking have become the fastest growing jobs in the computer field. With companies networking to share resources and reduce expenses the networking specialist is an invaluable part of the new company structure. There is a wide variety of jobs in networking including installation, maintenance, training, managing and user support.

Graduates find excellent opportunities as Network Administrators, Network Support, and Certified Network Engineers in business, manufacturing, government and education. Jobs for Networking Specialists for all types of installations are found throughout the country with opportunities for excellent earnings and rapid advancement. Jobs include the following:

- Networking Engineer
- Network Help Desk Support
- Datacommunications Specialist
- PC Network Administrator
- Information Specialist
- WAN Manager Network Administrator
- LAN Specialist
- Telecommunications Specialist
- Certified Network Engineer
- LAN Manager

## Program Outcomes

1. Graduates will have knowledge and skills in computer network engineering.
2. Graduates will have knowledge and experience in system design, analysis and maintenance.
3. Graduates of the Computer Network programs will be prepared for employment as computer network engineers.
4. Graduates will be prepared to take industry certification exams.

*Information is subject to change.  
This Program Requirements Guide is not a contract.*

## Program Faculty

Warren Sheaffer warren.sheaffer@saintpaul.edu

## Part-Time/Full-Time Options

Some day and evening class availability. Students may attend full time or part time.

## Program Requirements

Check off when completed

| Course   | Cr        |
|--|-----------|
| <input type="checkbox"/> CSCI 1410 Computer Science & Information Systems . . . . .      | 4         |
| <input type="checkbox"/> CSCI 1423 Computer Networking 1 – Client . . . . .              | 4         |
| <input type="checkbox"/> CSCI 1440 Networking Fundamentals . . . . .                     | 4         |
| <input type="checkbox"/> CSCI 1523 Intro to Computing and Programming Concepts . . . . . | 4         |
| <input type="checkbox"/> CSCI 2420 Computer Security . . . . .                           | 4         |
| <input type="checkbox"/> CSCI 2451 Computer Networking 2 – Server . . . . .              | 4         |
| <input type="checkbox"/> CSCI 2453 Computer Virtualization . . . . .                     | 4         |
| <input type="checkbox"/> CSCI 2461 Computer Networking 3 – Linux . . . . .               | 4         |
| <input type="checkbox"/> CSCI 2465 Computer Networking 4 – Infrastructure . . . . .      | 4         |
| <input type="checkbox"/> CSCI 2475 A+ Hardware/Operating System Prep . . . . .           | 4         |
| <input type="checkbox"/> CSCI 2570 Machine Architecture and Organization . . . . .       | 4         |
| <b>Subtotal . . . . .</b>  | <b>44</b> |

## General Education Requirements Cr

Refer to the Minnesota Transfer Curriculum Course List for each Goal Area

|  |           |
|--|-----------|
| <input type="checkbox"/> Goal 1: Communication . . . . .                                   | 7         |
| ENGL 1711 Composition 1 – 4 cr   |           |
| SPCH XXXX – 3 cr   |           |
| <input type="checkbox"/> Goal 3 or Goal 4 . . . . .  | 3         |
| Goal 3: Natural Sciences OR  |           |
| Goal 4: Mathematical/Logical Reasoning   |           |
| <input type="checkbox"/> Goal 5: History, Social Science and Behavioral Sciences . . . . . | 3         |
| <input type="checkbox"/> Goal 6: Humanities and Fine Arts . . . . .                        | 3         |
| <b>General Education Requirements . . . . .</b>  | <b>16</b> |

**Total Program Credits . . . . . 60**

## Transfer Opportunities

Saint Paul College has a transfer articulation agreement between the following program and post-secondary institution for the baccalaureate degree program listed below.

For more information please go to [www.saintpaul.edu/Transfer](http://www.saintpaul.edu/Transfer).

### Computer Network Engineering AAS

- BS Operations Management  
Minnesota State University-Moorhead
- BS Information Technology  
Saint Mary's University-Twin Cities Campus
- BS Computer Information Systems  
College of St. Scholastica
- BA Individualized Studies  
Metropolitan State University

## Program Start Dates

Fall, Spring, Summer

## Course Sequence

The following sequence is recommended for a full-time student. Not all courses are offered each semester.

### First Semester

|  |           |
|--|-----------|
| CSCI 1410 Computer Science & Information Systems . . . . . | 4         |
| CSCI 1423 Computer Networking 1 – Client . . . . .         | 4         |
| CSCI 1440 Networking Fundamentals . . . . .                | 4         |
| Goal 1: ENGL 1711 Composition 1 . . . . .                  | 4         |
| <b>Total Semester Credits . . . . .</b>                    | <b>16</b> |

### Second Semester

|   |           |
|---|-----------|
| CSCI 1523 Intro to Computing and Programming Concepts . . . . . | 4         |
| CSCI 2451 Computer Networking 2 – Server . . . . .              | 4         |
| CSCI 2461 Computer Networking 3 – Linux . . . . .               | 4         |
| CSCI 2475 A+ Hardware/Operating System Prep . . . . .           | 4         |
| <b>Total Semester Credits . . . . .</b>                         | <b>16</b> |

### Third Semester

|   |           |
|---|-----------|
| CSCI 2453 Computer Virtualization . . . . .               | 4         |
| Goal 1: SPCH XXXX . . . . .                               | 3         |
| Goal 3: Natural Science OR                                |           |
| Goal 4: Mathematical/Logical Reasoning . . . . .          | 3         |
| Goal 5: History, Social and Behavioral Sciences . . . . . | 3         |
| Goal 6: Humanities and Fine Arts . . . . .                | 3         |
| <b>Total Semester Credits . . . . .</b>                   | <b>16</b> |

### Fourth Semester

|  |           |
|--|-----------|
| CSCI 2420 Computer Security . . . . .                      | 4         |
| CSCI 2465 Computer Networking 4 – Infrastructure . . . . . | 4         |
| CSCI 2570 Machine Architecture and Organization . . . . .  | 4         |
| <b>Total Semester Credits . . . . .</b>                    | <b>12</b> |

**Total Program Credits . . . . . 60**

*See back of this guide for Course Chart*

### Minimum Program Entry Requirements

Students entering this program must meet the following minimum program entry requirements:

**Reading:** Score of 78+ or grade of "C" or better in READ 0722

**Writing:** Score of 78+ or grade of "C" or better in ENGL 0922

**Elementary Algebra:** Score of 76+ or grade of "C" or better in MATH 0910

### Assessment Results and Prerequisites:

Students admitted into Saint Paul College programs may need to complete additional courses based on assessment results and course prerequisite requirements. Certain MATH, READ, and ENGL courses have additional prerequisites.

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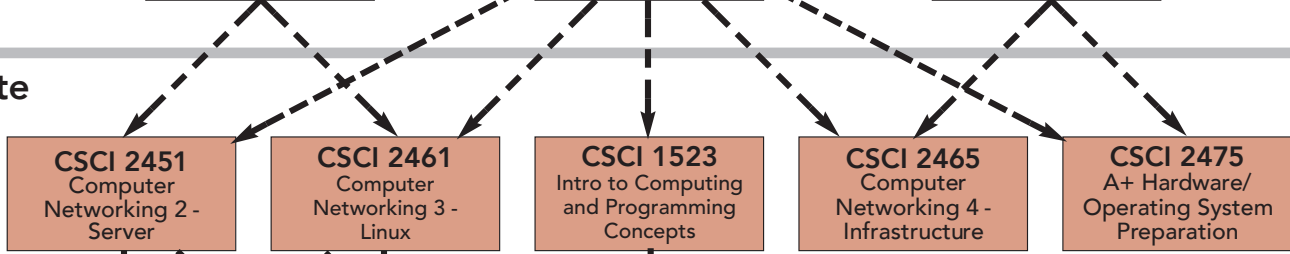
**Computer Network Engineering** AAS DEGREE *(continued)*  
 (44 credits + 16 GenEd credits)

The below chart illustrates the courses required for completion of this degree.

**Introductory**



**Intermediate**



**Advanced**  
 (offered once per year)

