Computer Science Transfer Pathway AS Degree

Program Overview
The Computer Science Transfer Pathway AS Degree is designed to provide students with opportunities for immediate employment or for transfer to four-year institutions. The College has developed articulation agreements with four-year institutions to assist students with their transfer goals. See a Pathway Advisor for further information.

Students planning a career in this area should have above average mathematic reasoning and communication skills. Students should exhibit qualities of patience, and preciseness and enjoy working in a team environment.

Career Opportunities
Graduates of this program may choose to continue their education at a four-year institution in a Computer Science or related field. Others may elect to enter the workforce following graduation. Graduates will find opportunities in the computer science field in the areas of programming or database management in business, manufacturing, government and education. With additional education and experience, students may advance to positions such as Database Analyst, Systems Analyst, Software Developer or Programmer-Analyst.

Program Outcomes
1. Graduates will be able to develop complex algorithms which underlie common programming tasks.
2. Graduates will be able to construct and analyze the performance of complex data structures and use them to develop efficient computer programs.
3. Graduates will have a sound understanding of the mathematics that underlies Computer Science and be able to develop and deploy computer programs which utilize it.
4. Graduates of the program will have mastered the general education requirements for work and life roles.

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 saintpaul.edu/Transfer.

Computer Science AS
BA Individualized Studies
Metropolitan State University
BS Information Technology
Saint Mary’s University-Twin Cities Campus
BS Computer Information Systems
College of St. Scholastica

Program Faculty
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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
☐ CSCI 1410 Computer Science & Information Systems ........................................... 4
☐ CSCI 1523 Intro to Computing and Programming Concepts .................................. 4
☐ CSCI 1524 Intro to Algorithms and Data Structures ............................................. 4
☐ CSCI 1533 ANSI C Language Programming ......................................................... 2
☐ CSCI 1541 Java Programming 1 .................................................................................. 4
☐ CSCI 2460 Discrete Structures of Computer Science .............................................. 4
☐ CSCI 2469 Advanced Programming Principles .................................................... 4
☐ CSCI 2570 Machine Architecture & Organization .................................................. 4
Subtotal .................................................. 30

General Education/MnTC Requirements Cr
Refer to the Minnesota Transfer Curriculum Course List for each Goal Area
☐ Goal 1: Communication ......................................................................................... 9
  ENGL 1711 Composition 1 – 4 cr
  ENGL 1712 Composition 2 – 2 cr
  COMM 17XX – 3 cr
☐ Goal 3: Natural Sciences ..................................................................................... 5
  PHYS 2700 General Physics 1 – 5 cr
☐ Goal 4: Mathematical/Logical Reasoning ............................................................. 8
  MATH 2749 Calculus 1 – 4 cr
  MATH 2750 Calculus 2 OR
  MATH 1740 Introduction to Statistics - 4 cr
☐ Goal 5: History, Social Science and Behavioral Sciences ....................................... 3
☐ Goal 6: Humanities and Fine Arts ........................................................................ 3
☐ Goals 1-10 of the Minnesota Transfer Curriculum .............................................. 2
  Select a minimum of 2 additional credits. Students must select courses from at least six (6)
  Goal Areas of the Minnesota Transfer Curriculum.
General Education Requirements ................................................................. 30

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

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.

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
Goal 1: ENGL 1711 Composition 1 ............................................................................ 4
Goal 4: MATH 2749 Calculus 1 .................................................................................. 4
Goals 1-10 of the Minnesota Transfer Curriculum .................................................. 2
Total Semester Credits ......................................................................................... 14

Second Semester
CSCI 1523 Intro to Computing and Programming Concepts .................................. 4
Goal 3: PHYS 2700 General Physics 1 ........................................................................ 5
Goal 4: MATH 2750 Calculus 2 OR
MATH 1740 Introduction to Statistics ................................................................... 4
Goal 5: History, Social Sciences, Behavioral ............................................................ 3
Total Semester Credits ......................................................................................... 16

Third Semester
CSCI 1533 ANSI C Language Programming ............................................................ 2
CSCI 1541 Java Programming 1 .................................................................................. 4
CSCI 2570 Machine Architecture & Organization .................................................. 4
Total Semester Credits ......................................................................................... 15

Fourth Semester
CSCI 1524 Intro to Algorithms and Data Structures ................................................ 4
CSCI 2460 Discrete Structures of Comp Science ...................................................... 4
CSCI 2469 Advanced Programming Principles ..................................................... 4
Goal 6: Humanities and Fine Arts ........................................................................... 3
Total Semester Credits ......................................................................................... 15

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

See back of this guide for Course Chart
The below chart illustrates the courses required for completion of this degree.

### Introductory

- **CSCI 1410**
  - Computer Science & Information Systems

### Intermediate

- **CSCI 1523**
  - Intro to Computing and Programming Concepts
- **CSCI 1541**
  - Java Programming 1

### Advanced

- **CSCI 1533**
  - ANSI C Language Programming
- **CSCI 1524**
  - Intro to Algorithms and Data Structures
- **CSCI 2570**
  - Machine Architecture & Organization
- **CSCI 2469**
  - Advanced Programming Principles
- **CSCI 2460**
  - Discrete Structures of Comp Science