Computer Programming AAS DEGREE

Program Overview

The job of the applications programmer is to (1) review job specifications provided by the system analyst and end user and (2) plan, code, test, and document a programming solution which takes the available data input and produces the desired output in the form of a printed report or a screen display. The programming language(s) used depends on the nature of the problem and the languages available to the programmer at his/her installation.

The student should have above average communications and math skills. He/she should exhibit qualities of patience, perseverance and preciseness and should enjoy working in a team environment and also be able to work independently.

Career Opportunities

Graduates find excellent opportunities as computer programmers in business, manufacturing, government and education. Jobs for computer programmers for all types of computer systems are found throughout the country with opportunities for good earning and rapid advancement. Jobs include: Programmer, Database Project Specialist, Applications Programmer, Technical Programmer, Systems Analyst, MIS Coordinator, Software Developer, Junior Programmer-Analyst, and Senior Programmer-Analyst.

Program Outcomes

1. Graduates will be able to design and code production software applications.
2. Graduates will be able to analyze complex organizational problems and create design specifications to address these problems.
3. Graduates will be able to use industry standard database management systems to support their applications
4. Graduates of the degree programs will have mastered the general education requirements for work and life roles.
5. Graduates will be prepared to take certification exams in their area of specialization.

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 contact a transfer specialist or go to www.saintpaul.edu/Transfer.

Computer Programming 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

Program Faculty

Warren Sheaffer warren.sheaffer@saintpaul.edu

Program Requirements

☑ Check off when completed

Course	Cr
☐ CSCI 1410 Computer Science & Information Systems	4
☐ CSCI 1423 Computer Networking – Client	4
☐ CSCI 1450 Web Fundamentals/HTML	4
☐ CSCI 1523 Intro to Computing and Programming Concepts	4
☐ CSCI 1524 Intro to Algorithms and Data Structures	4
☐ CSCI 2570 Machine Architecture and Organization	4
☐ **Technical Electives**	**4**
Select 1 of the following courses listed below. Ensure that your elective is not part of your chosen emphasis:	
☐ CSCI 1541 Java Programming 1	4
☐ CSCI 1531 Objective-C Programming	4
☐ CSCI 1550 Database Management Fundamentals	4
☐ CSCI 2440 Client Side Programming 1 (required for the Web Based 2D Game Development Emphasis)	4
☐ CSCI 2442 Server Side Programming	4
☐ CSCI 2560 Introduction to Computer Games	4
Subtotal	**28**

Complete one of the Emphases listed below 16

Java Program Emphasis	Cr
☐ CSCI 1541 Java Programming 1	4
☐ CSCI 1542 Java Programming 2	4
☐ CSCI 1550 Database Management Fundamentals	4
☐ CSCI 2466 J2EE-JSP and Servlets	4
Total Program Credits	**16**

Web Development Emphasis	Cr
☐ CSCI 2440 Client Side Programming 1	4
☐ CSCI 2442 Server Side Programming	4
☐ Select 2 of the following courses	8
☐ CSCI 2466 J2EE-JSP and Servlets	4
☐ CSCI 2621 Ruby on Rails	4
☐ CSCI 2622 Client Side Programming 2	4
Total Program Credits	**16**

Mobile Development Emphasis	Cr
☐ CSCI 1531 Objective-C Programming	4
☐ CSCI 1541 Java Programming 1	4
☐ CSCI 2628 Programming iOS Devices	4
☐ CSCI 2629 Programming Android Devices	4
Total Program Credits	**16**

Web Based 2D Game Development Emphasis	Cr
☐ DGIM 2521 2D Web Animation	2
☐ DGIM 2586 Digital Sound	2
☐ CSCI 2587 Web Based Game Development 1	4
☐ CSCI 2588 Web Based Game Development 2	4
☐ DGIM Technical Electives	4
☐ DGIM 1490 3D Animation Fundamentals	4
☐ DGIM 2560 Illustrator	4
☐ DGIM 1483 Photoshop 1	2
☐ DGIM 1484 Photoshop 2	2
Total Program Credits	**16**

Enterprise Emphasis	Cr
☐ CSCI 1410 Computer Science and Information Systems	4
☐ CSCI 1423 Computer Networking 1 - Client	4
☐ CSCI 1544 Enterprise Operating Systems	4
☐ CSCI 1546 COBOL Programming 1	4
☐ CSCI 1547 COBOL Programming 2	4
☐ CSCI 2470 Enterprise Database Systems	4
☐ CSCI 2472 Enterprise Transaction Processing (CICS)	4

General Education Requirements	Cr
Refer to the Minnesota Transfer Curriculum Course List for each Goal Area	
☐ Goal 1: Communication	7
ENGL 1711 Composition 1 – 4 cr	
SPCH XXXX (Goal 1 only) – 3 cr	
☐ Goal 3 or Goal 4	3
Goal 3: Natural Sciences OR	
Goal 4: Mathematical/Logical Reasoning	
☐ Goal 5: History, Social Science, and Behavioral Sciences	3
☐ Goal 6: Humanities and Fine Arts	3
General Education Requirements	**16**

Total Program Credits 60

Continued on back

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

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.

009A (7011)

SAINT PAUL COLLEGE
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Computer Programming AAS DEGREE *(continued)*

Program Start Dates

Fall, Spring, Summer

Course Sequence

The following sequence is recommended for a full-time student; however, this sequence is not required. Not all courses are offered each semester.

First Semester
CSCI 1410 Computer Science & Information Systems. . 4
CSCI 1423 Computer Networking – Client. 4
CSCI 1450 Web Fundamentals/HTML 4
SPCH XXXX (Goal 1 only) 3
Total Semester Credits. 15

Second Semester
CSCI 1523 Intro to Computing and Programming Concepts 4
Select Appropriate Emphasis Course 4
CSCI XXXX Technical Elective 4
Natural Sciences (Goal 3) OR Mathematical/Logical Reasoning (Goal 4) 3
Total Semester Credits. 15

Third Semester
CSCI 1524 Intro to Algorithms and Data Structures. . . 4
Select Appropriate Emphasis Course 4
Select Appropriate Emphasis Course 4
ENGL 1711 Composition 1 4
Total Semester Credits. 16

Fourth Semester
CSCI 2570 Machine Architecture and Organization . . . 4
Select Appropriate Emphasis Course 4
Humanities and Fine Arts (Goal 6) 3
History, Social Science, and Behavioral Sciences (Goal 5) 3
Total Semester Credits. 14

Total Program Credits 60

Computer Programming AAS Degree (44 credits + 16 GenEd credits)

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