

# Computer Science

## AWARDS

COMPUTER SCIENCE TRANSFER PATHWAY A.S. . . . .60 cr  
COMPUTER PROGRAMMER A.A.S. . . . . .60 cr

## A.S., COMPUTER SCIENCE TRANSFER PATHWAY DEGREE

(60 CREDITS)

Computer Science Curriculum . . . . .22 cr  
Liberal Arts Curriculum . . . . .38 cr

### CAMPUS CONTACT FOR THIS PROGRAM

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### PURPOSE

The Computer Science Transfer Pathway A.S. offers students a powerful option: the opportunity to complete an Associate of Science degree with course credits that directly transfer to designated Computer Science bachelor's degree programs at Minnesota State universities. The curriculum has been specifically designed so that students completing the pathway degree and transferring to one of the seven Minnesota State Universities\* enter the university with junior-year status. All courses in the Transfer Pathway associate degree will directly transfer and apply to the designated bachelor's degree programs in a related field.

The Computer Science Pathway consists of the Required Pathway Curriculum and select Minnesota Transfer Curriculum (MnTC) requirements to bring your credit total to 60 credits.

*\*Universities within the Minnesota State system include Bemidji State University; Metropolitan State University; Minnesota State University, Mankato; Minnesota State University, Moorhead; Southwest Minnesota State University; St. Cloud State University; and Winona State University.*

## TRANSFER PATHWAYS

With this transfer pathway, you will be able to transfer to the following majors:

At Bemidji State University  
Computer Science – BS

At Metropolitan State University  
TBD

At Minnesota State University, Mankato  
TBD

At Minnesota State University, Moorhead  
TBD

At Southwest Minnesota State University  
TBD

At St. Cloud State University  
Computer Science – BS

At Winona State University  
TBD

**COMPUTER SCIENCE PATHWAY CURRICULUM 22 CREDITS**

- ITC 2000 PC Hardware and Software (A+) .....3
- CS 1110 Computer Science I with Java .....3
- CS 1119 Computer Programming in C++.....4
- CS 2200 Computer Architecture .....4
- CS 2300 Algorithms and Data Structures.....4
- CS 2350 Discrete Structures.....4

**LIBERAL ARTS 38 CREDITS**

- ENG 1108 Writing and Research Skills .....4
- ENG 1111 Research Writing in the Disciplines OR  
ENG 1114 The Research Paper OR  
ENG 1130 Writing and Research for the Professions ..... 2-3
- COMM 1100 Interpersonal Communication OR  
COMM 1110 Public Speaking OR  
COMM 2230 Small Group Communication .....3
- Natural Science (MnTC Goal 3) .....3-5  
Recommend: PHYS 1081 Calculus Based Physics I
- MATH 1133 Calculus I .....5
- History, Social Sciences & Behavioral Sciences (MnTC Goal 5) .....3
- Humanities, Fine Arts and Literature (MnTC Goal 6) .....3
- MnTC Goals 7-10 any course .....3
- Liberal Arts Electives (MnTC courses only) .....9-12

**RECOMMENDED ELECTIVE COURSES**

Depending on Transfer plans, students may wish to consider taking some/all of the following courses as part of the Liberal Arts electives:

- MATH 1134 Calculus II
- PHYS 1081 Calculus Based Physics I
- PHYS 1082 Calculus Based Physics II
- PHIL 1120 Logic

**RECOMMENDED COURSE OF STUDY FOR  
COMPUTER SCIENCE PATHWAY A.S. DEGREE**

Here is the recommended course of full-time study for the Computer Science Transfer Pathway A.S. degree. Note that not all courses will be available every semester. In many instances, you will be able to choose a specific course from a MnTC Goal Area. For a complete list of MnTC Goal Area course choices, please visit: [www.inverhills.edu/MnTC](http://www.inverhills.edu/MnTC)

**COMPUTER SCIENCE PATHWAY SEMESTER 1 15 CREDITS**

- CS 1110 Computer Science I with Java .....3
- ITC 2000 PC Hardware and Software (A+) .....3
- ENG 1108 Writing & Research Skills (MnTC Goal 1, 2) .....4
- MATH 1133 Calculus I (MnTC Goal 4).....5

**COMPUTER SCIENCE PATHWAY SEMESTER 2 16 CREDITS**

- CS 1119 Computer Programming in C++ .....4
- COMM 1100 Interpersonal Communication (MnTC Goal 1, 7) .....3
- History, Social Science & Behavioral Science (MnTC Goal 5) .....3
- Humanities, Fine Arts and Literature (MnTC Goal 6) .....3
- Liberal Arts Electives (MnTC) .....3

**COMPUTER SCIENCE PATHWAY SEMESTER 3 15 CREDITS**

- CS 2200 Computer Architecture.....4
- Science with lab (MnTC Goal 3) .....3-5
- Liberal Arts Electives (MnTC) .....3-5
- MnTC Goals 7-10 any course.....3

**COMPUTER SCIENCE PATHWAY SEMESTER 4 14 CREDITS**

- CS 2300 Algorithms and Data Structures.....4
- CS 2350 Discrete Structures .....4
- ENG 1111 Research Writing in the Disciplines OR  
ENG 1114 The Research Paper OR  
ENG 1130 Writing & Research for the Professions ..... 2-3
- Liberal Arts Electives (MnTC) .....3-4

**TOTAL CREDITS .....60**

## AWARD

A.A.S. COMPUTER PROGRAMMER .....60 cr

## A.A.S. COMPUTER PROGRAMMER (60 CREDITS)

Computer Programmer Core Curriculum ..... 27 cr  
Program Electives ..... 13 cr  
Liberal Arts Curriculum .....20 cr

### PURPOSE

Graduates of this program are well-prepared in software programming and software engineering abilities to help execute a wide variety of information technology projects.

## REQUIRED COMPUTER PROGRAMMER CORE 27 CREDITS

- ITC 2000 PC Hardware & Software (A+) .....3
- ITC 1480 Linux Essentials .....3
- CS 1110 Computer Science I with Java.....3
- CS 1119 Computer Programming with C++ .....4
- CS 1127 Advanced Java Programming.....3
- CS 2200 Computer Systems Architecture .....4
- CS 2300 Algorithms and Data Structures .....4
- ITC 2480 Administering Linux Servers .....3

## PROGRAM ELECTIVES 13 CREDITS

- Any Computer Science course
- MATH 1120 or higher
- ITC 2000 or higher
- PHIL 1120

## LIBERAL ARTS CURRICULUM 20 CREDITS

- ENG 1108 Writing and Research Skills .....4
- COMM 1100 Interpersonal Communication.....3
- MATH 1118 or 1127.....4
- History, Social Sciences & Behavioral Sciences (MnTC Goal 5) .....3
- Humanities, Fine Arts and Literature, (MnTC Goal 6) .....3
- Liberal Arts Electives (MnTC Goals 1-10) .....3

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