

STEM

SOFTWARE DEVELOPMENT

Delivery: Daytime and Evening Classes

Start: Fall or Spring Semester, Full- or Part-Time

AWARDS

Software Development A.A.S. Degree	69 cr.
Software Development Diploma	60 cr.
Desktop Programming Certificate	27 cr.
Web Programming Certificate	27 cr.

MAJOR DESCRIPTION

This program prepares students to become computer programmers. Learning an array of programming languages used for software development. Students design, write, debug and test application software. Individual effort and teamwork are developed. Skilled graduates are prepared to provide software solutions for employers.

WORK ENVIRONMENT

Working conditions are generally indoors in offices or laboratories. Programmers convert data from project specifications and problem statements to develop computer programs. Often employed in a team setting, programmers are also working more from home or other remote locations as telecommuting becomes more prevalent.

POTENTIAL JOB TITLES

- Computer Programmer
- Computer Software Specialist
- Software Architect
- Software Developer
- Software Development Engineer
- Software Quality Assurance Specialist

SALARY DATA

See latest data at careerwise.minnstate.edu.

- Average Wage: \$69.10/hour
- Top Earners: \$83.16/hour

SOFTWARE DEVELOPMENT

A.A.S. DEGREE

This is a suggested sample course sequence.

Please contact your program advisor regarding your academic plans.

First Year - Fall Semester 18 cr

ENGL1150	Composition I	3
ISTC1015	Supporting Business Applications	3
ISTC1030	Operating Systems I	3
ISTC1045	Network Systems I: Introduction to Networking	3
ISTC1300	Introduction to Programming	3
SPEE1020	Interpersonal Communication	3

First Year - Spring Semester 18 cr

ISTC1033	Operating Systems II	3
ISTC1050	Database Systems	3
ISTC1061	Intro to IT Security	3
ISTC1100	Business Communications	3
ISTC1510	Web Programming I	3
ISTC2320	.NET I †	3

Second Year - Fall Semester 18 cr

ISTC1230	System Analysis and Design	3
ISTC2110	Web Programming II	3
MATS1251	or MATS1240 or MATS1300 or PHIL1250*	3
	General Elective (any MnTC area)	3
	Technical Electives (Certificate Dependent)**	6

Second Year - Spring Semester 15 cr

ISTC2100	Project Management or ISTC2970 Internship	3
ISTC2330	Cross Platform Mobile App Development †	3
ISTC2610	Web Programming III †	3
	General Elective (any MnTC area)	3
	Technical Electives (Certificate Dependent)**	3

TOTAL PROGRAM REQUIREMENTS 69

† Course only offered once a year. Please see faculty advisor for schedule.

* PHIL1250 is 3 credits. MATS1251, 1240 & 1300 are 4 credits. Students who complete MATS1251, 1240, or 1300 will get 1 credit towards their General Elective total.

** Students must choose one of the following certificates to complete the Software Development AAS: Desktop Programming or Web Programming.

SOFTWARE DEVELOPMENT DIPLOMA

*This is a suggested sample course sequence.
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First Year - Fall Semester 15 cr

ENGL1150	Composition I.....	3
ISTC1015	Supporting Business Applications.....	3
ISTC1030	Operating Systems I.....	3
ISTC1045	Network Systems I: Introduction to Networking.....	3
ISTC1300	Introduction to Programming.....	3

First Year - Spring Semester 15 cr

ISTC1033	Operating Systems II.....	3
ISTC1050	Database Systems.....	3
ISTC1061	Intro to IT Security.....	3
ISTC1510	Web Programming I.....	3
ISTC2320	.NET I †.....	3

Second Year - Fall Semester 15 cr

ISTC1230	System Analysis and Design.....	3
ISTC2110	Web Programming II.....	3
SPEE1020	Interpersonal Communication.....	3
	Technical Electives (Certificate Dependent)**.....	6

Second Year - Spring Semester 15 cr

ISTC1100	Business Communications.....	3
ISTC2330	Cross Platform Mobile App Development †.....	3
ISTC2610	Web Programming III †.....	3
	Technical Electives (Certificate Dependent)**.....	3
	General Elective (any MnTC area).....	3

TOTAL PROGRAM REQUIREMENTS 60

† Course only offered once a year. Please see faculty advisor for schedule.

** Students must choose one of the following certificates to complete the Software Development AAS: Desktop Programming or Web Programming.

DESKTOP PROGRAMMING CERTIFICATE

*This is a suggested sample course sequence.
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First Year - Fall Semester 3 cr

ISTC1300	Introduction to Programming.....	3
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First Year - Spring Semester 9 cr

ISTC1510	Web Programming I.....	3
ISTC2315	Java II †.....	3
ISTC2320	.NET I †.....	3

Second Year - Fall Semester 9 cr

ISTC2110	Web Programming II.....	3
ISTC2325	.NET II †.....	3
ISTC2330	Cross Platform Mobile App Development †.....	3

Second Year - Spring Semester 6 cr

ISTC2050	Data Structures †.....	3
ISTC2610	Web Programming III †.....	3

TOTAL PROGRAM REQUIREMENTS 27

† Course only offered once a year. Please see faculty advisor for schedule.

WEB PROGRAMMING CERTIFICATE

*This is a suggested sample course sequence.
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First Year - Fall Semester 3 cr

ISTC1300	Introduction to Programming.....	3
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First Year - Spring Semester 9 cr

GRDT1016	Typography and Layout I.....	3
ISTC1510	Web Programming I.....	3
ISTC2320	.NET I †.....	3

Second Year - Fall Semester 9 cr

ISTC2110	Web Programming II.....	3
ISTC2330	Cross Platform Mobile App Development †.....	3
WEBD1650	Web Content I.....	3

Second Year - Spring Semester 6 cr

ISTC2610	Web Programming III †.....	3
WEBD2695	UX/UI Design.....	3

TOTAL PROGRAM REQUIREMENTS 27

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**DAKOTA COUNTY
TECHNICAL COLLEGE**

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