

# North Dakota State College of Science

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## **Computer Information Systems**

Because we live in a computerized society, web design offers a world-wide job market with unlimited locations and diverse environments. Computers are used in every type of business, banks, accounting firms, hospitals, manufacturing companies, insurance companies, sales companies, etc. Web sites are utilized for a variety of businesses.

The World Wide Web has unveiled new opportunities for businesses. The Computer Information Systems Department is equipped with computer hardware and software that is current with industry standards. The Computer labs are equipped with microcomputers and have access to mainframe and mini-computer sources. The facilities are open during extended hours to give students adequate time to complete hands-on projects.

## **Computer and Network Support**

Because we live in a computerized and networked society, computer and network support offers a world-wide job market with a variety of locations and environments. Computers and networks are used in all types of businesses, banks, accounting firms, hospitals, manufacturing companies, insurance companies, sales companies, etc. The placement record in this program has been excellent.

For students wishing to pursue a bachelor's degree at a four-year college or university, please see the Computer Science or Management Information Systems Liberal Arts Transfer Curriculum Plans listed in the Liberal Arts section of this catalog.

## **Program purposes**

1. To provide students with the knowledge of computer and network training enabling them to configure and install systems.
2. To provide students with the knowledge and skills necessary to assist management in the selection of computer hardware and software.
3. To provide students with the knowledge of computer networks enabling them to configure and install them.
4. To prepare students to pursue a third-year option in Web Design or Information Systems Security Technician (see additional program purposes listed under Web Design emphasis and Information Systems Security Technician Emphasis).

## **College facilities**

NDSCS has many computer labs. Each of these labs has current versions of software installed.

CIS students are required to purchase laptop computers. These laptops give students adequate computer access to complete projects and assignments given in class.

## **Instruction**

The instructors of this program have both formal educational training and work experience in computer operations, computer maintenance, computer programming, Web design and information system security. Laboratory time is scheduled into each student's program allowing them to receive individual attention and hands-on computer experience.

NOTE: This program requires the purchase of a notebook computer. The cost will be approximately \$2,000 with several purchase or lease options available. For further information, call the Information Technology Department at (701) 671-2730.

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## Computer and Network Support

<http://www.ndscs.nodak.edu/departments/asbdean/compnwkspt.jsp>

### Hardware Technician Certificate (9-month option)

ELEC 150	Introduction to Electronics	4
CIS 197	Internship	1
CIS 218	Microcomputer Hardware I	3
CIS 219	Microcomputer Hardware II	3
CIS 220	Operating Systems (UNIX)	3
CIS 240	Supporting MS W2K Professional	3
CIS 265	Cisco Networking	4
CIS 266	Cisco Routing, Config., and Troubleshooting	4
ENGL 110	College Composition I	3
PHIL 210	Ethics	3

Total Credits 31

### Computer and Network Support (2-year option)

CIS 222	Netware Administration (4.x)	4
CIS 267	Cisco Switching and LAN Topologies	4
CIS 268	Cisco Switching and Project Management	4
CIS 242	Microsoft Server OS	4
CIS 246	Support Infrastructure MS W2K	4
CSCI 160	Computer Science I (JAVA)	4
MATH 102	Intermediate Algebra	3
Wellness elective		3
English elective		3
Social and Behavioral Science, Humanities and History electives		2

Total Credits 65

### Web Design emphasis (third-year option)

CIS 180	Creating Web Pages I	3
CIS 181	Creating Web Pages II	3
CIS 182	Perl/CGI	3
CSCI 122	Visual Basic	3
CSCI 133	Database Concepts (SQL)	3
CSCI 135	Web Programming (XML)	3
ENGL 125	Introduction to Professional Writing	3

Total Credits 86

### Information Systems Security Technician Emphasis

CIS 279	Security Awareness and Policy	1
CIS 280	Fundamentals of Network Security I	4
CIS 281	Fundamentals of Network Security II	4
CIS 282	Computer System Security	4
CIS 283	Computer System Security Advanced	4
CIS 284	Managing Network Security	4
CIS 290	Network Security Design	4
CIS/CSCI Elective		3

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Total Credits 93

## Computer Programming

<http://www.ndscs.nodak.edu/departments/asbdean/computerprog.jsp>

BADM 274	Project Management	3
CSCI 122	Visual Basic	3
CSCI 125	Beginning COBOL (II)	3
CSCI 133	Database Concepts (SQL)	3
CSCI 160	Computer Science I (JAVA)	4
CSCI 161	Computer Science II (JAVA)	4
CSCI 172	Intermediate Visual Basic	3
CSCI 175	Intermediate COBOL (II)	4
CSCI 183	Database Concepts II (SQL)	3
CSCI 263	Computer Science III (JAVA)	3
CSCI 297	Internship	5
ACCT 2000	Elements of Accounting I	4
BOTE 108	Business Mathematics	3
ENGL 110	College Composition I	3
Wellness Elective		2
ENGL/COMM Elective		3
General Education Elective		3
CSCI/CIS Elective		3
Social and Behavioral Science, Humanities and History electives		5

Total Credits                      64

### Web Design emphasis (third-year option)

CIS 180	Creating Web Pages I	3
CIS 181	Creating Web Pages II	3
CIS 182	Perl/CGI	3
CIS 220	Operating Systems (UNIX)	3
CSCI 135	Web Programming (XML)	3
ENGL 125	Introduction to Professional Writing	3

Total Credits                      82

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## Microcomputer Operator

<http://www.ndscs.nodak.edu/departments/asbdean/microopr.jsp>

CIS 104	Microcomputer Database (Access)	3
CIS 105	Microcomputer Spreadsheet (Excel)	3
CIS 180	Creating Web Pages 1	3
CIS 240	Supporting MS W2K Professional	3
BOTE 108	Business Mathematics	3
BOTE 146	Word Processing I	2
BOTE 147	Word Processing	2
CSCI 101	Introduction to Computers	3
ENGL 110	College Composition I	3
Wellness Elective		1
English Elective		3
Social/Political/Behavioral Science elective		3
	Total Credits	32

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## Pre-Computer Programming

<http://www.ndscs.nodak.edu/departments/asbdean/precompprog.jsp>

CSCI 116	Business Use of Computers	4
CSCI 122	Visual Basic	3
CSCI 125	Beginning COBOL (II)	3
CSCI 160	Computer Science I (JAVA)	4
CSCI 161	Computer Science II (JAVA)	4
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
	Total Credits	24

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## Web Design/Web Developer

<http://www.ndscs.nodak.edu/departments/asbdean/webdevl.jsp>

### Required courses for Web Design certificate

BOTE 108	Business Mathematics	3
CIS 180	Creating Web Pages I	3
CIS 181	Creating Web Pages II	3
CIS 182	Perl/CGI	3
CIS 220	Operating systems (UNIX)	3
CIS 265	Cisco Networking	4
CSCI 122	Visual Basic	3
CSCI 133	Database Concepts (SQL)	3
CSCI 135	Web Programming (XML)	3
ENGL 110	College Composition I	3
ENGL 125	Introduction to Professional Writing	3

Total Credits 34

### Additional courses needed for CIS A.A.S. with emphasis in Web Developer degree

BADM 110	Introduction to eBusiness	3
CIS 232	Graphics Design	3
CIS 233	Vector Graphics and Web Animation	3
CIS 244	Web Server Management	3
CIS 197/297	Internship and /or Cooperative Education	2-3
CSCI 102	Fundamentals of Cyberlaw	3
CSCI 230	Web Database I (ASP/PHP)	3
PHIL 210	Ethics	3
CIS Elective		3
Social and Behavioral Science, Humanities and History electives		4
Wellness elective		2

Total Credits 66-67

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## Computer Science

<http://www.ndscs.nodak.edu/departments/asbdean/lacompsci.jsp>

COMM 110	Fundamentals of Public Speaking	3
CSCI 122	Visual Basic	3
CSCI 160	Computer Science I (JAVA)	4
CSCI 161	Computer Science II (JAVA)	4
CSCI 250	Assembly Language	3
CSCI 270	Computer Organization	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
MATH 165	Calculus I	4
MATH 166	Calculus II	4
ECON 201	Principles of Microeconomics	3
Wellness Electives		2
CIS/CSCI or General Electives		6
Humanities/History Electives		6
Science Electives		8
Social and Behavioral Sciences Electives		8

Total Credits                      64

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