Bismarck State College

Computer Support Specialist	Associate in Applied Science degree
Geographic Information Systems	Associate in Applied Science degree in Geographic Information Systems
Web Development and Design	Associate in Applied Science degree in Web Page Development and Design
Computer Science	Associate in Science degree

Computer Support Specialist
http://www.bsc.nodak.edu/faculty/compinfo/

The computer support specialist program provides two years of technical computer education, leading to an Associate in Applied Science degree. Students will prepare to work in various business and institutional settings. Their experiences at BSC will provide training in computer operating systems, networking environments, programming and Web design.

BSC developed this program to fill a growing need in the marketplace. Technology is driving businesses today, especially health care, financial services, public utilities and sales. These businesses need computer specialist to upgrade equipment, maintain data networks, build Web sites and design business applications. In addition to these technical skills, employers are seeking computer personnel who can communicate well with people, since these computer specialists work with end-users to solve problems and provide assistance.

Employment opportunities are expected to grow, as research shows computer-oriented careers are among the fastest growing in the country. In North Dakota, the computer support specialist occupation is expected to increase by over 60% from 2000 to 2010, making it the third fastest-growing occupation in the state.

Career possibilities: Computer technician, computer operator, network administrator, network technician, cable installer/technician, and technical support.

Semester I

ENGL 110	College Composition	3
CIS 230	Electronic Publishing	3
CIS 220	Linux Fundamentals	3
CIS 240	Windows Vista Administration	3
CIS 265	Cisco Network Fundamentals	4
	Total	16

Semester II

CSCI 122	Beginning Visual Basic	3
CIS 219	Computer Hardware	3
CIS 223	Linux System Administration	3
CIS 242	Windows Server 2008 Administration	3
CIS 266	Cisco Routing Protocols and Concepts	4
	Total	16

Semester III

	Arts & Humanities/Social & Behavioral Science Elective	3
Math 210	Elementary Statistics	3
CIS 225	Linux System Administration II	3
CIS 244	Windows Server 2008 Active Directory Configuration	3
CIS 267	Cisco LAN Switching & Wireless	4
CIS 204	Database Theory with SQL	3
	Total	19

Semester IV

COMM 110	Fundamentals of Public Speaking	3
CIS 255	Computer and Network Security	3
CIS 226	Linux Network and Security Administration	3
CIS 248	Windows Server 2008 Network Infrastructure	3
CIS 268	Cisco Accessing the WAN	4
BADM 274	Project Management	3
	Total	19

Third Year Option

Semester V

CIS	Windows Server 2008 Applications Infrastructure	3
CIS 270	Building Scalable Internetworks	4
CIS 272	Building Multilayer Switched Networks	4
CIS 260	Advanced Linux Administration	3
CIS 261	Linux Web Server Administration	3
	Total	17

Semester VI

CIS	Server 2008 Enterprise Administration	3
CIS 271	Implementing Secure Converged WANs	4
CIS 273	Optimizing Converged Cisco Networks	4
CIS 262	Linux Resource Administration	3
CIS 263	Linux E-Mail Administration	3
	Total	17

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Geographic Information Systems
http://www.bsc.nodak.edu/faculty/gist/

Bismarck State College offers a program certificate, a certificate of completion, and an Associate in Applied Science degree in Geographic Information Systems (GIS). GIS is a geospatial computer-based software program that aids in the collection, maintenance, storage, analysis, output, and distribution of spatial data and geographic information.

We have not lived in a time when our world resources have been pushed to their limits due to explosive population growth more than the present. Business, industry, and government require a skilled and competent workforce to manage the challenges associated with a growing world population. The GIS curriculum at BSC addresses the critical employment needs in the workforce through hands-on real world applications.

The Associate in Applied Science degree in Geographic Information Systems has been designed to provide a core set of skills and competencies along with a broad knowledge of the discipline. The certificate program emphasizes GIS applications and computer technology. The certificate of completion program offers proficiency in GIS as a supplement to another course of study.

Individuals who have earned a degree or certificate in GIS are in high demand. GIS proficiency is one of the top 10 skills employers look for in job applicants. Graduates with GIS skills are in demand to fill 75,000 jobs nationwide with the number of professionals using GIS growing 15 percent annually.

Career Possibilities: energy production/distribution, agriculture, science, transportation, engineering, wildlife/natural resources, law enforcement, emergency management, government, social services, archeology, planning, marketing, service and retail business.

Freshman Fall Semester			
ENGL 110	College Composition		3
CSCI 101	Intro. To Computers		3
MATH 103	College Algebra		4
GIS 105	Fundamentals of Geographic Information Systems		3
GIS 107	GIS Applications		3
	Total Credits	16	
Freshman Spring Semester			
ENGL 125	Intro. To Professional Writing		3
CIS 104	Microcomputer Database		3
GEOG 121	Physical Geography		3
GEOG 121L	Physical Geography Lab		1
CAD 211	Computer Aided Design I		3
GIS 201	Advanced GIS Applications		3
	Total Credits	16	
Sophomore Fall Semester			
CIS 204	Database Theory with SQL		3
GIS 206	GIS in Science, Agriculture, and Business		3
GIS 215	GPS, Photogrammetry and Remote Sensing		3
POLS 116	State and Local Government		3
ECON 105	Elements of Economics		3
	Total Credits	15	
Sophomore Spring Semester			
MATH 210	Elementary Statistics		3
CSCI 122	Beginning Visual Basic		3
GIS 225	GIS Project Development and Management		3
GIS 235	Cartographic Design and Analysis		3
BADM 202	Principles of Management		3
	Total Credits	15	

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Web Page Development and Design
http://www.bsc.nodak.edu/faculty/compinfo/

This curriculum is designed for students who want to specialize in Web page development and design. Completion of the two-year program leads to an Associate in Applied Science (AAS) degree in Web Page Development and Design. Completion of the on-year program leads to a Program Certificate in Web Page Development and Design.

This curriculum includes industry standard CIW (Certified Internet Webmaster) Certifications and Paths. Over the course of two year, Web candidates take a series of four CIW exams based on their study of Web languages such as XHTML, CSS, JavaScript, XML, PHP and Java. Candidates can earn individual certifications in CIW Foundations, CIW Site Designer, CIW E-Commerce, and CIW JavaScript. Successful completion of any of these four exams results in the designation of Certified Internet Web Master (CIW). The level of mastery depends on the exam taken and how many exams taken in a particular CIW track. The curriculum also offers training and certification in software Adobe Dreamweaver, Flash, and InDesign, Illustrator and Photoshop.

Students should have a working knowledge of word processing and basic concepts of the personal computer. This program is designed for an entry-=level student. Students completing the program will be able to create and maintain Web pages for most organizations.

Freshman Fall Semester

ENGL 110	Composition I	3
CIS 110	Desktop Publishing (InDesign)	3
CIS 120	Adobe Acrobat/Microsoft Outlook	3
CIS 151	Web Foundations	3
CIS 221	Networking Essentials	3
CIS 232	Graphic Design (Photoshop)	3
	Total Credits	18

Freshman Spring Semester

CIS 152	Cascading Style Sheets (CSS)	3
CIS 210	Advanced Desktop Publishing (Illustrator)	3
CIS 230	Electronic Publishing (Dreamweaver)	3
CIS 231	Search Engine Optimization	3
CSCI 121	Beginning Visual Basic	3
	Total Credits	15

Sophomore Fall Semester

CIS 233	Vector Graphics and Web Animation (Flash)	3
CIS 250	Advanced Web Design (CIW)	3
CIS 252	XML	3
CSCI 160	Computer Science I	4
	Communication elective	3
	Total Credits	16

Sophomore Spring Semester

CIS 251	Site Design (CIW)	3
CIS 253	PHP	3
CIS 254	E-Commerce (CIW)	3
	General Education Electives	6
	Total Credits	15

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Computer Science
http://www.bsc.nodak.edu/faculty/compsci/

Opportunities in computer science and information technology are at their highest point in recent years. As computer capabilities are increased and computer usage becomes more widespread, the demand for qualified computer scientists should remain high. New software is designed daily and existing programs updated in virtually every area of business and industry.

Completion of BSC's two-year program will enable a student to enroll in a transfer school at the junior level to pursue a degree in computer science or a related field. Since each school requires a slightly different set of courses to complete the degree, it is important that the student be in contact with the transfer school when planning course for the sophomore year.

An Associate in Science degree is awarded to those students who complete the requirements for the two-year degree.

Those who plan a career in computer science should have an aptitude for logical thinking, good organizational skills, the ability to work independently and/or as part of a team, a strong mathematics background, and excellent communication skills.

Career Possibilities: A variety of industries such as technology, business, agriculture, government, education, or research, and a variety of areas within those industries: systems analysis, software development, data base management, management information systems, technical support, software support, designing new equipment, instructing, and management.

Freshman

CSCI 160	Computer Science I	4
CSCI 161	Computer Science II	4
MATH 165	Calculus I	4
MATH 166	Calculus II	4
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
	Math/Science/Technology Electives	8
	Arts and Humanities Electives	6
	Total Credits	36

Sophomore

CSCI 250	Assembly Language	3
CSCI 270	Computer Organization	3
CSCI 124	Beginning C++	3
MATH 220	Probability and Statistics	3
MATH 208	Discrete Mathematics	3
COMM 110	Fundamentals of Public Speaking	3
	Social Science Electives	6
	Enrichment	2
	Total Credits	26

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