



# Information Technology Career Cluster

Pathway	OCCUPATIONS RELATING TO THIS CAREER CLUSTER
<b>Information Support &amp; Services</b>	Database Administrator • Account Manager • Help Desk Specialist • Information Systems Architect • Systems Analyst • Instructional Designer • Testing Engineer
<b>Network Systems</b>	User Support Specialist • Network Administrator • Network Engineer • Information Technology Engineer • Network Security Analyst • Telecommunications Network Technician
<b>Programming &amp; Software Development</b>	Computer Engineer • Software Applications Specialist • Game Developer • Software Applications Tester • Project Lead • Software Design Engineer
<b>Web &amp; Digital Communications</b>	Multimedia Specialist • Web Designer • Web Site Developer • Animator • Blog Developer • Streaming Media Specialist

HIGH SCHOOL COURSE REQUIREMENTS				
English	Math	Science	Social Studies	Physical Education
Four units required to graduate; including literature, composition, and speech.	Three units required to graduate	Three units required to graduate.	Three units required to graduate.	One unit required to graduate.
Choices may include:	Choices may include:	Required Units:	Required Units:	Required Units:
<input type="checkbox"/> English 9      05071	<input type="checkbox"/> Algebra I      11031	<input type="checkbox"/> Physical Science      13030	<input type="checkbox"/> U.S. History      15085	<input type="checkbox"/> Physical Education 1 unit      08030
<input type="checkbox"/> English 10      05072	<input type="checkbox"/> Geometry      11120	<input type="checkbox"/> Biology      13020	<input type="checkbox"/> American Government ½ unit <b>AND</b> 15111	<b>OR</b>
<input type="checkbox"/> English 11      05073	<input type="checkbox"/> Advanced Algebra      11032	<input type="checkbox"/> One additional unit of Science	<input type="checkbox"/> Economics ½ unit      15060	<input type="checkbox"/> Physical Education ½ unit <b>AND</b> 08030
<input type="checkbox"/> English 12      05074		<b>OR</b>	<b>OR</b>	<input type="checkbox"/> Health ½ unit      18010
		<input type="checkbox"/> Biology      13020	<input type="checkbox"/> Problems of Democracy 1 unit      15201	
		<input type="checkbox"/> Chemistry      13031	<b>Additional units may include:</b>	
		<input type="checkbox"/> Physics      13042	<input type="checkbox"/> Civics	
			<input type="checkbox"/> Geography	
			<input type="checkbox"/> Psychology	
			<input type="checkbox"/> World History	

Career and Technical Education Electives			Extended Learning Opportunities	
Three units of foreign or Native American language, fine arts, or career and technical education are required to graduate.				
Information Technology Education	<input type="checkbox"/> Integrated Math for Computer Science/IT      27121	<b>School-Based:</b>		<b>Community Based:</b>
<input type="checkbox"/> Introduction to IT      27101	<input type="checkbox"/> Programming Essentials      27122	<input type="checkbox"/> SkillsUSA	<input type="checkbox"/> Mentorship	
<input type="checkbox"/> IT Essentials 2      27220	<input type="checkbox"/> Fundamentals of JAVA Programming      27125	<input type="checkbox"/> FBLA	<input type="checkbox"/> Volunteer	
<input type="checkbox"/> Computer Hardware & Operating Systems (A+)      27219	<input type="checkbox"/> Advanced JAVA Programming      27127	<input type="checkbox"/> TSA	<input type="checkbox"/> Part-time Employment	
<input type="checkbox"/> Introduction to Networking      27265	<input type="checkbox"/> Data Modeling & SQL      27500	<input type="checkbox"/> FFA	<input type="checkbox"/> Service Learning Project	
<input type="checkbox"/> CCNA Introduction to Networks      27266	<input type="checkbox"/> Intro to Programming Languages      27120	<input type="checkbox"/> DECA	<input type="checkbox"/> Job Shadow	
<input type="checkbox"/> CCNA Routing & Switching Essentials      27267	<input type="checkbox"/> Introduction to Cybersecurity      27280	<input type="checkbox"/> FCCLA	<input type="checkbox"/> Internship	
<input type="checkbox"/> CCNA Scaling Networks      27268		<input type="checkbox"/> Career Research		
<input type="checkbox"/> CCNA Connecting Networks      27269	<b>Business Education</b>		<input type="checkbox"/> Cooperative Work Experience	
<input type="checkbox"/> Essentials of Desktop Operating Systems      27300	<input type="checkbox"/> Database      14026			
<input type="checkbox"/> Essentials of Network Operating Systems      27310	<input type="checkbox"/> Communication Technologies      14028			
<input type="checkbox"/> Geographic Information Systems (GIS)      27400				
<input type="checkbox"/> Computer Software Applications      27102	<b>Technology &amp; Engineering Education</b>			
<input type="checkbox"/> Introduction to Web Design      27170	<input type="checkbox"/> Foundations of Technology      10094			
<input type="checkbox"/> Introduction to Cybersecurity      27280	<input type="checkbox"/> PLTW Digital Electronics      10512			
<input type="checkbox"/> Desktop Operating Systems – Linux      27305	<input type="checkbox"/> Communication Technology      10251			
<input type="checkbox"/> Mobile Applications Development      27128	<input type="checkbox"/> Technological Design      10410			

North Dakota Information Technology Related Postsecondary Programs			
Pathway	Associate's Degree or Less	Bachelor's Degree	Master's Degree or More
<b>Information Support &amp; Services</b>	<input type="checkbox"/> Computer Applications (CCCC) <input type="checkbox"/> Computer Support Specialist (TMCC) <input type="checkbox"/> Computer Information Technology (DCB, UTTC) <input type="checkbox"/> Computerized Office Management (DCB) <input type="checkbox"/> Geographic Information Systems Technician (BSC) <input type="checkbox"/> Information Systems Administrator (NDSCS) <input type="checkbox"/> Information Processing Specialist (BSC) <input type="checkbox"/> Information Management (NHSC) <input type="checkbox"/> Information Technology (LRSC, NDSCS, RC, SBC, WSC) <input type="checkbox"/> IT Forensics & Security (NDSCS) <input type="checkbox"/> Management Information Systems transfer (NDSCS)	<input type="checkbox"/> Applied Business Information Technology (MiSU) <input type="checkbox"/> Computer Technology Management (DSU) <input type="checkbox"/> Data Analytics (RC) <input type="checkbox"/> Information Security (RC) <input type="checkbox"/> Information Technology Management (RC, UJ, UM) <input type="checkbox"/> Technology Education (DSU, VCSU)	<input type="checkbox"/> Information Systems (MiSU) <input type="checkbox"/> Library/Information Technology (VCSU)
<b>Network Systems</b>	<input type="checkbox"/> Cybersecurity & Computer Networks (BSC) <input type="checkbox"/> Information Management (NHSC) <input type="checkbox"/> Information and Communications Technology (NDSCS, SBC) <input type="checkbox"/> Network Systems Administration (RC)	<input type="checkbox"/> Computer Information Systems (UM, VCSU) <input type="checkbox"/> Information Systems (UND) <input type="checkbox"/> Management Information Systems (NDSU, UJ)	<input type="checkbox"/> Computer Science (NDSU, UND) <input type="checkbox"/> Electrical and Computer Engineering (NDSU)
<b>Programming &amp; Software Development</b>	<input type="checkbox"/> Computer Science transfer (BSC, NDSCS)	<input type="checkbox"/> Computer Engineering (NDSU) <input type="checkbox"/> Computer Science (DSU, MiSU, NDSU, RC, UJ, UM, UND) <input type="checkbox"/> Electrical Engineering (NDSU) <input type="checkbox"/> Software Application Development (RC) <input type="checkbox"/> Software Engineering (VCSU)	<input type="checkbox"/> Electrical and Computer Engineering (NDSU) <input type="checkbox"/> Software Engineering (NDSU)
<b>Web &amp; Digital Communications</b>	<input type="checkbox"/> Web Design (DCB, NDSCS) <input type="checkbox"/> Web Developer/WebMaster (DCB, NDSCS) <input type="checkbox"/> Web Page Development and Design (BSC) <input type="checkbox"/> Web Programming (RC)	<input type="checkbox"/> New Media and Web Design (NDSU)	

North Dakota Postsecondary Institutions Offering Information Technology Related Programs					
<b>BSC</b>	Bismarck State College	<a href="http://www.bismarckstate.edu">www.bismarckstate.edu</a>	<b>NHSC</b>	Nueta Hidatsa Sahnish College	<a href="http://nhsc.edu">http://nhsc.edu</a>
<b>CCCC</b>	Cankdeska Cikana Community College	<a href="http://www.littlehoop.edu">www.littlehoop.edu</a>	<b>RC</b>	Rasmussen College	<a href="http://www.rasmussen.edu">www.rasmussen.edu</a>
<b>DCB</b>	Dakota College at Bottineau	<a href="http://www.dakotacollege.edu">www.dakotacollege.edu</a>	<b>SBC</b>	Sitting Bull College	<a href="http://www.sittingbull.edu">www.sittingbull.edu</a>
<b>DSU</b>	Dickinson State University	<a href="http://www.dickinsonstate.edu">www.dickinsonstate.edu</a>	<b>TMCC</b>	Turtle Mountain Community College	<a href="http://www.tm.edu">www.tm.edu</a>
<b>LRSC</b>	Lake Region State College	<a href="http://www.lrsc.edu">www.lrsc.edu</a>	<b>UJ</b>	University of Jamestown	<a href="http://www.uj.edu">www.uj.edu</a>
<b>MaSU</b>	Mayville State University	<a href="http://www.mayvillestate.edu">www.mayvillestate.edu</a>	<b>UM</b>	University of Mary	<a href="http://www.umary.edu">www.umary.edu</a>
<b>MiSU</b>	Minot State University	<a href="http://www.minotstate.edu">www.minotstate.edu</a>	<b>UND</b>	University of North Dakota	<a href="http://www.und.edu">www.und.edu</a>
<b>NDSCS</b>	ND State College of Science	<a href="http://www.ndscs.edu">www.ndscs.edu</a>	<b>VCSU</b>	Valley City State University	<a href="http://www.vcsu.edu">www.vcsu.edu</a>
<b>NDSU</b>	ND State University	<a href="http://www.ndsu.edu">www.ndsu.edu</a>	<b>WSC</b>	Williston State College	<a href="http://www.willistonstate.edu">www.willistonstate.edu</a>