



Information Technology Career Cluster

Pathway	OCCUPATIONS RELATING TO THIS CAREER CLUSTER
Information Support & Services	Database Administrator • Account Manager • Help Desk Specialist • Information Systems Architect • Systems Analyst • Instructional Designer • Testing Engineer
Network Systems	User Support Specialist • Network Administrator • Network Engineer • Information Technology Engineer • Network Security Analyst • Telecommunications Network Technician
Programming & Software Development	Computer Engineer • Software Applications Specialist • Game Developer • Software Applications Tester • Project Lead • Software Design Engineer
Web & Digital Communications	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 AND 15111	OR
<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 AND 08030
<input type="checkbox"/> English 12 05074		OR	OR	<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		
		<input type="checkbox"/> Physics 13042	Additional units may include:	
			<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			School-Based:	Community Based:	
<input type="checkbox"/> Introduction to IT	27101	<input type="checkbox"/> Mobile Applications Development	27128	<input type="checkbox"/> SkillsUSA	<input type="checkbox"/> Mentorship
<input type="checkbox"/> IT Essentials 2	27220	<input type="checkbox"/> Programming Essentials	27122	<input type="checkbox"/> FBLA	<input type="checkbox"/> Volunteer
<input type="checkbox"/> Computer Hardware & Operating Systems (A+)	27219	<input type="checkbox"/> Fundamentals of JAVA Programming	27125	<input type="checkbox"/> TSA	<input type="checkbox"/> Part-time Employment
<input type="checkbox"/> Introduction to Networking	27265	<input type="checkbox"/> Advanced JAVA Programming	27127	<input type="checkbox"/> FFA	<input type="checkbox"/> Service-Learning Project
<input type="checkbox"/> CCNA Introduction to Networks	27266	<input type="checkbox"/> Data Modeling & SQL	27500	<input type="checkbox"/> DECA	<input type="checkbox"/> Job Shadow
<input type="checkbox"/> CCNA Routing & Switching Essentials	27267	<input type="checkbox"/> Intro to Programming Languages	27120	<input type="checkbox"/> FCCLA	<input type="checkbox"/> Internship
<input type="checkbox"/> CCNA Scaling Networks	27268	<input type="checkbox"/> Internet of Things Fundamentals	27111	<input type="checkbox"/> Career Research	
<input type="checkbox"/> CCNA Connecting Networks	27269	<input type="checkbox"/> CTE AP Computer Science Principles	27510	<input type="checkbox"/> Cooperative Work Experience	
<input type="checkbox"/> Essentials of Desktop Operating Systems	27300	<input type="checkbox"/> CTE AP Computer Science A	27520		
<input type="checkbox"/> Essentials of Network Operating Systems	27310	<input type="checkbox"/> Governor's School: Information Technology	51012		
<input type="checkbox"/> Geographic Information Systems (GIS)	27400	<input type="checkbox"/> Programming Essentials: Python	27123		
<input type="checkbox"/> Computer Software Applications	27102	<input type="checkbox"/> Computer Gaming and Design	27130		
<input type="checkbox"/> Introduction to Web Design	27170	<input type="checkbox"/> Essentials of Desktop Operating Systems – Linux	27305		
<input type="checkbox"/> Introduction to Cybersecurity	27280				

North Dakota Information Technology Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Information Support & Services	<input type="checkbox"/> Office Technology (CCCC) <input type="checkbox"/> Computer Science (NHSC) <input type="checkbox"/> Computer Support Specialist (TMCC) <input type="checkbox"/> Computer Information Technology (UTTC) <input type="checkbox"/> Computerized Office Management (DCB) <input type="checkbox"/> Data Analytics Technician (BSC) <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 Technology (DCB, 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"/> Data Science (RC, UND) <input type="checkbox"/> Information Analytics (DSU) <input type="checkbox"/> Information Technology Management (RC, UJ, UM) <input type="checkbox"/> Technology Education (DSU, VCSU)	<input type="checkbox"/> Data Science (RC, UND) <input type="checkbox"/> Information Systems (MiSU) <input type="checkbox"/> Library/Information Technology (VCSU)
Network Systems	<input type="checkbox"/> Cybersecurity (TMCC) <input type="checkbox"/> Cybersecurity & Computer Networks (BSC) <input type="checkbox"/> Information and Communications Technology (NDSCS) <input type="checkbox"/> Network Systems Administration (RC, TMCC)	<input type="checkbox"/> Computer Information Systems (UM, VCSU) <input type="checkbox"/> Computer Technology Management (DSU) <input type="checkbox"/> Cyber Security (RC, UND) <input type="checkbox"/> Cyber Security and Information Technology (BSC) <input type="checkbox"/> Information Systems (UND) <input type="checkbox"/> Information Technology Management (RC, UJ, UM) <input type="checkbox"/> Management Information Systems (MiSU, NDSU, UJ)	<input type="checkbox"/> Electrical and Computer Engineering (NDSU) <input type="checkbox"/> Cyber Security (UND)
Programming & Software Development	<input type="checkbox"/> Computer Programming (DSU) <input type="checkbox"/> Computer Science transfer (BSC, NDSCS, NHSC) <input type="checkbox"/> Software Application Development (RC)	<input type="checkbox"/> Computer Engineering (NDSU) <input type="checkbox"/> Computer Science (DSU, MiSU, NDSU, RC, UJ, UM, UND) <input type="checkbox"/> Software Engineering (VCSU)	<input type="checkbox"/> Computer Science (NDSU, UND) <input type="checkbox"/> Data Science (RC, UND) <input type="checkbox"/> Software Engineering (NDSU)
Web & Digital Communications	<input type="checkbox"/> Web Design (DCB, NDSCS, RC, TMCC) <input type="checkbox"/> Web Developer/Webmaster (DCB, DSU, NDSCS) <input type="checkbox"/> Web Page Development and Design (BSC)		

North Dakota Postsecondary Institutions Offering Information Technology Related Programs

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