



Science, Technology, Engineering & Mathematics (STEM) Career Cluster

Pathway	OCCUPATIONS RELATING TO THIS CAREER CLUSTER
Engineering & Technology	Aerospace Engineer • Architectural Engineer • Automotive Engineer • CAD Technician • Civil Engineer • Computer Programmer • Electrical Engineer • Mapping Technician • Mining Engineer Metallurgist • Petroleum Engineer • Survey Technician • Biomedical Engineer • Agricultural Technician • Application Engineer
Science & Mathematics	Anthropologist • Astronomer • Chemist • Geneticist • Ecologist • Environmental Scientist • Geologist • Research Technician • Economist • Analytical Chemist • Meteorologist Nuclear Chemist/Technician • Statistician • Atmospheric Scientist • Zoologist • Astrophysicist • Quality-Control Scientist

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 & 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.				
Technology & Engineering Education			School-Based:	Community Based:
<input type="checkbox"/> Foundations of Technology 10094	<input type="checkbox"/> Biomedical Technology 10710		<input type="checkbox"/> TSA	<input type="checkbox"/> Mentorship
<input type="checkbox"/> Technology & Society 10096	<input type="checkbox"/> Applying Technology 10093		<input type="checkbox"/> SkillsUSA	<input type="checkbox"/> Volunteer
<input type="checkbox"/> Advanced Design Applications 10338	<input type="checkbox"/> Production Technology 10110		<input type="checkbox"/> FFA	<input type="checkbox"/> Part-time Employment
<input type="checkbox"/> Advanced Tech Applications 10339	<input type="checkbox"/> Construction Technology 10111		<input type="checkbox"/> FBLA	<input type="checkbox"/> Service Learning Project
<input type="checkbox"/> Technological Design 10410	<input type="checkbox"/> Manufacturing Technology 10121		<input type="checkbox"/> FCCLA	<input type="checkbox"/> Job Shadow
<input type="checkbox"/> Engineering Design 10415	<input type="checkbox"/> Communication Technology 10251		<input type="checkbox"/> DECA	<input type="checkbox"/> internship
<input type="checkbox"/> Invention and Innovation 10510	<input type="checkbox"/> Design/Drafting 10259		<input type="checkbox"/> Career Research	
<input type="checkbox"/> PLTW Introduction to Engineering Design 10511	<input type="checkbox"/> 3D Modeling & Design 10260		<input type="checkbox"/> Cooperative Work Experience	
<input type="checkbox"/> PLTW Digital Electronics 10512	<input type="checkbox"/> Energy & Transportation Technology 10331			
<input type="checkbox"/> PLTW Principles of Engineering 10513	<input type="checkbox"/> Robotics Engineering 10411			
<input type="checkbox"/> PLTW Civil Engineering and Architecture 10514	<input type="checkbox"/> STEM Seminar 10610			
<input type="checkbox"/> PLTW Computer Integrated Manufacturing 10517	Trade, Industry & Technical Education			
<input type="checkbox"/> PLTW Principles of Biomedical Science 10730	<input type="checkbox"/> Drafting Technology I 17130			
<input type="checkbox"/> PLTW Principles of Medical Interventions 10734	<input type="checkbox"/> Drafting Technology II 17131			
<input type="checkbox"/> PLTW Principles of Human Body Systems 10732	Agriculture Education			
<input type="checkbox"/> Technological Systems 10515	<input type="checkbox"/> World Agricultural Science and Technology 01069			

North Dakota STEM Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Engineering & Technology	<input type="checkbox"/> Architectural Drafting & Estimating Technology (NDSCS) <input type="checkbox"/> Engineering Technology (BSC) <input type="checkbox"/> Geomatics (Land Surveying) (BSC) <input type="checkbox"/> Land Surveying and Civil Engineering (NDSCS) <input type="checkbox"/> Nuclear Power Technology (BSC) <input type="checkbox"/> Petroleum Engineering Technology (BSC) <input type="checkbox"/> Engineering transfer (BSC, CCCC, DCB, NDSCS, NHSC, SBC, TMCC, UTTC, WSC) <input type="checkbox"/> Robotics, Automation & Mechatronics Technology (NDSCS) <input type="checkbox"/> Simulation Technology (LRSC) <input type="checkbox"/> Technical Studies (BSC, NDSCS)	<input type="checkbox"/> Agricultural and Biosystems Engineering (NDSU) <input type="checkbox"/> Chemical Engineering (UND) <input type="checkbox"/> Civil Engineering (NDSU, UND) <input type="checkbox"/> Computer Engineering (NDSU) <input type="checkbox"/> Construction Engineering (NDSU) <input type="checkbox"/> Electrical Engineering (NDSU, UND) <input type="checkbox"/> Engineering Science (UM) <input type="checkbox"/> Geological Engineering (UND) <input type="checkbox"/> Industrial Engineering and Management (NDSU) <input type="checkbox"/> Manufacturing Engineering (NDSU) <input type="checkbox"/> Mechanical Engineering (NDSU, UND) <input type="checkbox"/> Petroleum Engineering (UND)	<input type="checkbox"/> Agricultural and Biosystems Engineering (NDSU) <input type="checkbox"/> Aviation (UND) <input type="checkbox"/> Chemical Engineering (UND) <input type="checkbox"/> Civil Engineering (NDSU, UND) <input type="checkbox"/> Electrical Engineering (UND) <input type="checkbox"/> Electrical/Computer Engineering (NDSU) <input type="checkbox"/> Environmental Engineering (NDSU, UND) <input type="checkbox"/> Geography and Geographic Information Sci. (UND) <input type="checkbox"/> Geological Engineering (UND) <input type="checkbox"/> Industrial Engineering & Management (NDSU) <input type="checkbox"/> Manufacturing Engineering (NDSU) <input type="checkbox"/> Mechanical Engineering (NDSU, UND) <input type="checkbox"/> Petroleum Engineering (UND) <input type="checkbox"/> Software Engineering (NDSU)
Science & Mathematics	<input type="checkbox"/> Biology transfer (BSC, DCB, TMCC, WSC) <input type="checkbox"/> Biotechnology transfer (NDSCS) <input type="checkbox"/> Chemistry transfer (BSC, DCB, NDSCS, TMCC, WSC) <input type="checkbox"/> Environmental Science Transfer (NHSC, TMCC, UTTC, WSC) <input type="checkbox"/> Environmental Tech - Lab & Field Technician (DCB) <input type="checkbox"/> Environmental Tech – Natural Resource Mgmt. (DCB) <input type="checkbox"/> Mathematics transfer (BSC, DCB, NDSCS, NHSC, TMCC, WSC) <input type="checkbox"/> Natural Science transfer (NDSCS, TMCC) <input type="checkbox"/> Pharmacy transfer (DCB, WSC) <input type="checkbox"/> Physical Science transfer (NDSCS, WSC) <input type="checkbox"/> Physics transfer (BSC, WSC) <input type="checkbox"/> Science transfer (NHSC)	<input type="checkbox"/> Atmospheric Sciences (UND) <input type="checkbox"/> Biochemistry/Molecular Biology (NDSU, UJ) <input type="checkbox"/> Biology/Biological Science (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) <input type="checkbox"/> Biotechnology (NDSU) <input type="checkbox"/> Chemistry (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) <input type="checkbox"/> Computer Science (DSU, MiSU, RC, UM, UND) <input type="checkbox"/> Earth Science Education (MiSU) <input type="checkbox"/> Environmental Science (DSU, NHSC, SBC, UTTC, UND, VCSU) <input type="checkbox"/> Forensic Science (UND) <input type="checkbox"/> Geology (MiSU, NDSU, UND) <input type="checkbox"/> Horticulture (NDSU) <input type="checkbox"/> Mathematics (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) <input type="checkbox"/> Microbiology (NDSU) <input type="checkbox"/> Molecular and Integrative Biology (UND) <input type="checkbox"/> Physics (NDSU, UND) <input type="checkbox"/> Statistics (NDSU) <input type="checkbox"/> Unmanned Aircraft Systems Operations (UND)	<input type="checkbox"/> Applied Statistics (NDSU) <input type="checkbox"/> Atmospheric Sciences (UND) <input type="checkbox"/> Biochemistry (NDSU) <input type="checkbox"/> Biology (NDSU, UND) <input type="checkbox"/> Biomedical Engineering (NDSU) <input type="checkbox"/> Chemistry (NDSU, UND) <input type="checkbox"/> Coatings and Polymeric Materials (NDSU) <input type="checkbox"/> Earth System Science and Policy (UND) <input type="checkbox"/> Entomology (NDSU) <input type="checkbox"/> Environmental/Conservation Science (NDSU, SBC) <input type="checkbox"/> Geology (UND) <input type="checkbox"/> Horticulture (NDSU) <input type="checkbox"/> Materials and Nanotechnology (NDSU) <input type="checkbox"/> Mathematics (NDSU, UND) <input type="checkbox"/> Microbiology (NDSU) <input type="checkbox"/> Physics/Astrophysics (NDSU, UND) <input type="checkbox"/> Plant Pathology (NDSU) <input type="checkbox"/> Plant Sciences (NDSU) <input type="checkbox"/> Scientific Computing (UND)

North Dakota Postsecondary Institutions Offering STEM 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	SBC Sitting Bull College www.sittingbull.edu
DCB Dakota College at Bottineau www.dakotacollege.edu	TMCC Turtle Mountain Community College www.tm.edu
DSU Dickinson State University www.dickinsonstate.edu	UTTC United Tribes Technical College www.uttcc.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