

# Minnesota North College – Vermilion Campus

## Land Surveying

Academic Year 2022-23  
Certificate (23 credits)

23 Credits Required Coursework	Prerequisites	Credits	Hr Lc/Lb
BIOL/NRT 1255 – Dendrology and Plant Ecology (MnTC Goal 3)	(CLR, CLW)	3	(2/2)
BUS 1530 – Legal Environment of Business (spring)	(CLR)	3	
MATH 1220 – College Algebra (fall or spring) (MnTC Goal 4) <u>AND</u>	(MATH0300)	3	
MATH 1225 – Trigonometry (spring) (MnTC Goal 4)	(MATH1220)	2	
OR			
MATH 1300 – Precalculus (spring) (MnTC Goal 4)	(MATH0300)	(5)	
NRT 1211 – Forest Field Skills (fall)	(CLR, MATH 0100)	3	(2/2)
NRT 2220 – Forestry and Wildlife Management Internship*	(NRT1211; 2.0 GPA)	1	
NRT 2236 – Land Surveying (fall)	(NRT 1211 or NRT2315)	3	(1/4)
NRT 2256 – Surveying / Mapping Techniques (spring)	(NRT2236; NRT2241**; NRT2315)	2	(0/4)
NRT 2315 – Intro to Geographic Information Systems (spring)	(NRT1211 or WQAL/WSHD1656)	2	(1/2)
PDEV 1130 – Employment Strategies (spring)		1	

\*Internship may be taken any time during certificate.

\*\*Or instructor approval for Land Surveying Certificate-only students.

### Program Description

The Land Surveying Certificate combines 23 credits in the area of mathematics, field skills, land surveying, GIS, AutoCAD, and an internship in the surveying profession.

The certificate does not replace an Associate of Science degree in Land Surveying for employment, but is designed as a sub-credential certificate of the Land Surveying AS. The benefit of the certificate is to enhance an existing degree program and gain additional experience with GIS, GPS and applications of mapping, above and beyond other Associate degrees. Land Surveying students may want additional field experience in combination with their transfer degree, or students who are pursuing a Natural Resources Technology program may want to enhance mathematical and surveying application skills to maximize employment opportunities at the technician level.

### Occupational Titles

Surveying Aide or Technician, Engineering Technician

### Program Learning Outcomes

Graduates of this program will:

1. Demonstrate competence in Land Navigation and Public Land Survey systems.
2. Understand and demonstrate the use of basic terminology, principles, equipment, and skills required for land measurements.
3. Utilize the basic functions of digital tools for data collection, analysis and presentation (GPS/GIS/PowerPoint/Excel/graph functions).
4. Demonstrate awareness of historical, political, economic, and social factors which may affect the Surveying profession.
5. Develop the quantitative mathematical skills necessary to measure, monitor, analyze and manage all aspects of natural resources.

### Program Faculty Contact

Rita Koch (rita.koch@minnesotanorth.edu or 218-235-2160)



*Minnesota North College, a member of Minnesota State, is an affirmative action, equal opportunity employer and educator. This document is available in alternate formats upon request by going to [www.MinnesotaNorth.edu](http://www.MinnesotaNorth.edu) to obtain the contact information of your home campus Accessibility Services coordinator.*

**AASC Approval Date: 11-15-21**  
**Document Updated: 06-16-2022**