SURVEYING & CIVIL ENGINEERING TECHNOLOGY (SCVL), AAS

At Dunwoody College of Technology, the Surveying & Civil Engineering Technology program prepares students to become technicians in the civil engineering and land surveying industries. Technicians may be employed by governmental agencies including counties, cities, and states. Graduates may also be employed in the private sector by contractors, engineering, or land surveying firms in a wide range of starting positions. Students are prepared to work in the industries of land surveying and civil engineering under a professional surveyor or civil engineer. Surveying technicians assist surveyors in collecting data and making maps of the earth's surface. Surveying technicians typically work in an office or visit sites to take measurements of the land. Civil engineering technicians help civil engineers plan and design the construction of highways, bridges, utilities, and other major infrastructure projects. They also help with commercial, residential, and land development.

Students are provided with experiences emphasizing surveying, drafting/design, and materials testing. Surveying courses give students the opportunity to learn how to operate industry utilized equipment, including the latest in GNSS (GPS) technology. Survey drawings and engineering plans are developed using enhanced computer-aided drafting programs (CAD). Arts & Sciences courses round out the course of study, providing students with the analytical, communication, and writing skills the industry demands of its professionals. The program prepares students to take the National Society of Professional Surveyors (NSPS) Certified Survey Technician (CST) Level I exam.

For students with a bachelor's degree in a related field, Dunwoody's Surveying certificate may provide an avenue to licensure as a Land Surveyor. The certificate offers 22 technical credits in land surveying, as currently required by the MN board of licensure (AELSLAGID). Technical courses include lectures and laboratories in areas such as GPS and geodetic surveying, 2D and 3D drafting, boundary control, and land use planning.

Credential Earned: AAS
Length of Program: 2 years (4 semesters)
Classes Offered: Day
Available Starts: Fall Semester; Spring Semester
Bachelor's Completion Option(s): Construction Management (CMGT), Bachelor of Science (https://catalog.dunwoody.edu/catalog-student-handbook/academic-programs/construction-sciences-building-technology/construction-management-cmgt-bachelor-science) | Business Management Leadership (AMGT), Bachelor of Science (https://catalog.dunwoody.edu/catalog-student-handbook/academic-programs/construction-sciences-building-technology/construction-management-cmgt-bachelor-science)

Program Outcomes

- Initiate and apply design of entry level complexity.
- Analyze drawings, specifications, surveys and apply industry standards.
- Interpret and review engineering and survey work.
- Analyze surveying and civil engineering principles, practices and techniques.
- Utilize field and office procedures to complete tasks.
- Operate industry software and equipment.

Degree Requirements

Code	Title	Credits
General Requirements		
MATH1050	Algebra, Trigonometry & Geometry	3
MATH1700	Pre Calculus	3
MATH2250	Statistics	3
Communications		3
Humanities		3
Social Sciences		3
General Electives		3
Technical Requirements		
SCVL1111	Introduction to Surveying	3
CSBT1002	Construction Drafting	3
SCVL1130	Legal Descriptions & Boundary Control	4
CSBT1000	AEC Seminar	1
SCVL1210	Control & Geodetic Surveying	4
SCVL1220	Transportation & Municipal Design	4
SCVL1230	Land Use Planning	4
CSBT2000	Professional Development	1
SCVL2111	Materials,Testing, Construction Methods	3
SCVL2120	Utility & Construction Design	4
SCVL2140	SCVL Topics	1
SCVL2210	Laser Scanning & Remote Sensing	4
SCVL2240	Exam Preparation	1
SCVL2250	Geospatial Technology	4
SCVL2260	Site & Subdivision Design	4
Technical Elective		
Choose any Construction Department courses		2
Total Credits		68

Sample Academic Plan

The following sample academic plan demonstrates how a student's schedule might look on a semester-by-semester basis, including elective courses. Your actual degree plan may differ from this sequence, depending on whether you start in the fall or spring semester, what transfer credits you may have (if any), and which Arts & Sciences courses and electives you take and when you take them.

The sample academic plan is for informational purposes only. To determine your academic plan, please meet with an academic advisor.

Course	Title	Credits
First Year		
Fall		
SCVL1111	Introduction to Surveying	3
CSBT1002	Construction Drafting	3
SCVL1130	Legal Descriptions & Boundary Control	4
CSBT1000	AEC Seminar	1
MATH1050	Algebra, Trigonometry & Geometry	3
Communications		3
	Credits	17
	Total Credits	17

Course	Title	Credits
First Year		
Spring		
SCVL1210	Control & Geodetic Surveying	4
SCVL1220	Transportation & Municipal Design	4
SCVL1230	Land Use Planning	4
CSBT2000	Professional Development	1
MATH2250	Statistics	3
Social Science		3
	Credits	19
	Total Credits	19

Course	Title	Credits
Second Year		
Fall		
SCVL2111	Materials,Testing, Construction Methods	3
SCVL2120	Utility & Construction Design	4
SCVL2140	SCVL Topics	1
Any courses under Construction department		2
MATH1700	Pre Calculus	3
Humanities		3
	Credits	16
	Total Credits	16

Course	Title	Credits
Second Year		
Spring		
SCVL2210	Laser Scanning & Remote Sensing	4
SCVL2240	Exam Preparation	1
SCVL2250	Geospatial Technology	4
SCVL2260	Site & Subdivision Design	4
General Elective		3
	Credits	16
	Total Credits	16

Courses

Descriptions

SCVL1111 | Introduction to Surveying | Lec/Lab (3 Credits)
Introduction to the technical equipment and industry processes used by surveying technicians to collect and interpret data.

CSBT1002 | Construction Drafting | Lec/Lab (3 Credits)
Implement construction graphics and conventions using hand drafting and drawing software.

SCVL1130 | Legal Descriptions & Boundary Control | Lecture (4 Credits)
Introduction to property descriptions and land survey systems with a focus on composing and interpreting legal descriptions used in surveys.

CSBT1000 | AEC Seminar | Seminar (1 Credit)
Introduction to the academic and classroom culture. Develop a proficiency in communication skills including research, oral presentation, writing, and collaboration.

SCVL1210 | Control & Geodetic Surveying | Lec/Lab (4 Credits)
Examine the fundamentals of Control Surveys, including Global Positioning Systems, focus and its' application to the geospatial industries, as well as an in-depth study of datums and projections.
Prerequisite(s): SCVL1110 And SCVL1111

SCVL1220 | Transportation & Municipal Design | Lec/Lab (4 Credits)
Utilize the principles of civil design with industry software to create elements of transportation and municipal design.
Prerequisite(s): CSBT1001 And CSBT1002

SCVL1230 | Land Use Planning | Lecture (4 Credits)
Introduction to the planning process used to develop land with an emphasis on land use for public and private needs in a community.

CSBT2000 | Professional Development | Seminar (1 Credit)
Apply technical skills in a related industry setting to acquire real world experience in an area of student interest.

SCVL2111 | Materials,Testing, Construction Methods | Lec/Lab (3 Credits)
Introduction to testing construction materials and methods, inspection and quality control. Examine construction documents to estimate quantities and costs for civil projects.

SCVL2120 | Utility & Construction Design | Lec/Lab (4 Credits)
Utilize the principles of civil design with industry software to create elements of utility infrastructure and its' construction.
Prerequisite(s): CSBT1001 And CSBT1002

SCVL2140 | SCVL Topics | Seminar (1 Credit)
Topics in land surveying and civil engineering presented and examined through lectures, speakers, and field trips to develop an awareness of current trends, issues, and the future of the surveying and civil design industries.
Prerequisite(s): CSBT1000

SCVL2210 | Laser Scanning & Remote Sensing | Lec/Lab (4 Credits)
Analyze Laser Scanning and Remote Sensing technology, including the integration of the data to surveying and civil engineering projects.
Prerequisite(s): SCVL1110 And SCVL1111

SCVL2240 | Exam Preparation | Seminar (1 Credit)
Review various categories relevant to certification and licensure exams. Emphasis will be on the topics listed to occur on the exams.
Prerequisite(s): SCVL1110, CSBT1000, And SCVL1111
Corequisite(s): SCVL1110

SCVL2250 | Geospatial Technology | Lecture (4 Credits)
Examine the current state of the Geospatial Industry, including Geographic Information Systems(GIS) and Geospatial products.
Prerequisite(s): SCVL1110 And SCVL1111

SCVL2260 | Site & Subdivision Design | Lec/Lab (4 Credits)
Utilize the principles of civil design with industry software to create elements of site design, including the design of subdivisions and study of the subdivision process.
Prerequisite(s): CSBT1001 And CSBT1002

MATH1050 | Algebra, Trigonometry & Geometry | Lecture (3 Credits)
Principles of algebra, geometry and trigonometry used in the context of a technical setting. Problem-solving strategies are developed and applied to technology.
General Education: Mathematics

MATH2250 | Statistics | Lecture (3 Credits)
Descriptive and inferential statistics, frequency distributions, probability theory, and issues related to gathering data; computer spreadsheets facilitate the organization, analysis and display of data.
General Education: Mathematics

MATH1700 | Pre Calculus | Lecture (3 Credits)
Preparation for Calculus. Topics include understanding functions from symbolic, tabular, and graphical perspectives. Explore function transformations and composition, polynomial functions, rational polynomial functions, trigonometric functions, exponential functions, and conic sections. The focus is on problem solving using mathematical models to represent real world situations.
General Education: Mathematics