

CIVIL ENGINEERING (CVNG), BACHELOR OF SCIENCE

At Dunwoody College of Technology, the Civil Engineering bachelor's degree is a hands-on engineering major that prepares graduates to work in this high-demand field. From bridges and roads, to electrical utilities and water systems, civil engineers play a vital role in designing, building, and maintaining the infrastructure that shapes our communities. Students from this four-year program graduate ready to work in a wide range of positions and locations, from small towns and public works departments to large cities and engineering firms.

Students study all five major civil engineering disciplines: structural, geotechnical, transportation, water resources, and environmental engineering. They develop the problem-solving skills to manage costs, materials, land, safety, and community needs in order to find the best solution that works in the real world. A high-tech field, modern civil engineers work with state-of-the-art technology, including drones, LiDAR, AI simulation tools, AutoDesk Civil 3D, smart technology, and virtual and augmented reality. An emphasis is placed on designing infrastructure for a sustainable future, including renewable energy and efficient transportation networks. Students benefit from cross-departmental learning through the School of Engineering and land surveying programs.

Civil engineering coursework includes topics such as Construction Materials, Utility Design, Water/Wastewater, Soil Mechanics, Transportation, and Environmental Engineering.

Hawk Core Curriculum courses enhance and support the technical coursework.

Students complete a Multidisciplinary Senior Design project during their senior year.

Credential Earned: BS

Length of Program: 4 years (8 semesters)

Classes Offered: Day on Campus

Available Starts: Fall Semester only

Degree Requirements

Code	Title	Credits
General Requirements		
HUMN3	Humanities Elective	3
SSCI1100	Intro to Macro & Micro Economics	3
PHYS1800	Physics I with Lab	4
MATH1811	Calculus I	4
PHYS1820	Physics II with Lab	4
MATH1821	Calculus II	4
MATH2810	Multi-Variable Calculus	4
MATH2820	Linear Algebra & Differential Equations	4
CHEM2110	Chemistry with Lab	4
MATH2260	Probability & Statistics	4
COMM3	Communications Elective	3
GENELEC	General Elective	3
Technical Requirements		
SCVL1111	Introduction to Topographic Surveying	3
ENGR1110	Introduction to Engineering	3
SCVL1002	Civil Drafting	3
CVNG1210	Geographic Information Systems (GIS)	2
ENGR1210	Introduction to Programming	3
MENG1230	Statics	3
SCVL2111	Materials, Testing, Construction Methods	3
SCVL2120	Utility & Construction Design	4
MENG2240	Mechanics of Materials	3
CVNG3110	Soil Mechanics	4
MENG3130	Thermodynamics	4
MENG2230	Dynamics	3
CVNG3220	Linear Structural Analysis	3
CVNG3210	Transportation Engineering	4
CVNG3230	Fluid Mechanics with Lab	4
ENGR3120	Engineering Economics	2
CVNG3240	Sustainability, Risk, & Resiliency	2
ENGR4141	Multidisciplinary Senior Design I	3
CVNG4110	Water Engineering	4
CVNG4120	Steel & Concrete Structures	4
CVNG4130	Civil Engineering Project Management	2
ENGR4240	Multidisciplinary Senior Design II	4
CVNG4210	Environmental Engineering	4
ENGR4110	Engineering Ethics	2
CVNG4295	FE Exam Prep	2
Total Credits		122

Program Outcomes

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare as well as global, cultural, social, environmental, and economic factors.
- An ability to communicate effectively with a range of audiences.
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- An ability to function effectively on a team whose members together provide leadership, create a collaborative environment, establish goals, plan tasks, and meet objectives.
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.