LAND SURVEYING (SURV)

SURV 100 Introduction to Surveying/Field Work3 Credits
Introduction to the basics of geomatics, including how to evaluate survey data accuracy and assess data limitations. Expectations of data analysis for engineering designs, property surveys, and construction layout staking will also be covered.

SURV 102 Surveying Calculations I3 Credits
Introduction to the mathematical concepts required for proper surveying, including the application of algebraic principles, trigonometry functions, and other concepts that are necessary in this field and in which proficiency is required by state regulations. Course work will include theory, errors and analysis, differentiation and trigonometric leveling, angles and directions, coordinate systems and calculations, and other relevant material.

SURV 200 Advanced Surveying Field Work4 Credits
Introduction to surveying methodology, survey design, planning and observing, and real-time kinematics. Students will also explore geodesy, state plane coordinates and the concepts of least squares analysis of survey adjustments. The labs - either two 3-hour weekday labs or one 6-hour weekend lab - will enable students to understand and master the practical aspects of these important surveying elements.

SURV 203 Legal Aspects of Surveying3 Credits
Exploration of records research and its importance in surveying, as well as understanding the public, private and quasi-public recorded and non-recorded record databases that establish land ownership and boundaries, easement boundaries, land-use rights and restrictions. Students will use these resources in applying surveying principles to both private and public lands.

SURV 204 Real Property Descriptions2 Credits
Exploration of historical and current issues relevant to writing land descriptions and using those descriptions for the practicing surveyor. Students will also gain a working knowledge of the relationship between written descriptions and field survey data, as well as how to interpret historic descriptions and the underlying principles of producing descriptions.

SURV 205 Advanced Surveying Computations/Calculations4 Credits
Introduction to advanced surveying computation concepts and procedures, including traverse error analysis, topographical surveying, mapping, and astronomical observations.

SURV 206 Property Law - Boundary Evidence3 Credits
Introduction to the foundational Common Law knowledge relevant to the surveying profession, practical application of that law, documentation of survey evidence, and the laws of boundary location.

SURV 207 Surveying Ethics: An Overview of Ethical Expectations2 Credits
Introduction to the surveyor’s liability, statutes of limitation as applied to the profession, and the surveyor’s role in court. Students will also understand the fundamental principles of real property law as applied to surveying with case studies reflecting common determinations of ownership and the surveyor’s judiciary role in real property ownership.

SURV 298 Internship/Capstone Project4 Credits
Demonstrated proficiency in the required surveying-specific knowledge to pass the Colorado exams through an internship and delivery of a capstone project on a mutually agreed upon topic.