

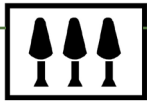
SURVEYING and GPS

GPS for the Recreational User

Develop an understanding of how to use a handheld GPS unit effectively. Practice gathering data and discuss the different types of information provided and how to utilize it. Learn what the NAVSTAR system is and the accuracies it can provide. Learn basic geodesy principles and how GPS communicates. This class is designed for the hunter, hiker, skier, rancher, or other outdoor enthusiast. Students need to bring their GPS unit and user's manual to class. A basic understanding of orienteering and reading topographic (USGS quad) maps is helpful.



CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT22100	100-500P	S	\$20	Mason	3/8	1



Surveying Fundamentals

Gain a working knowledge of the field surveying skill necessary for entry into the surveying profession. Topics covered during the first semester include surveying terminology, math, projections, coordinate geometry, Metes and Bounds, GPS, databases, property and legal descriptions, and boundary law. Topics covered in the second semester include curves, traverse adjustments, legal concepts and water law, surveying astronomy, basic field procedures, and construction plans and map reading.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221C0	600-800P	Th	\$128	Sylvester	1/31-5/8	13

Numbers and Surveying Trigonometry

This course opens up concepts to working with a personal calculator and numbers, i.e. significant figures, basic calculator functions, execution of angle and trig functions. We will touch on area and volume calculations, how plane (right angle and general triangle) and spherical trigonometry applies to surveying. Introduction and review of algebra and problem solving suggestions/tools. Students will need a calculator.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221D0	600-800P	Th	\$20	Sylvester	1/31-2/7	2

Mercator and Lambert Projections

Study the principles of projections used in surveying (i.e. Mercator/cylinder and Lambert/conic). Discussion of projection terms such as scale factor, grid north, and mapping angle will be included.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221E0	600-800P	Th	\$11	Sylvester	2/14	1

State Plane Coordinate Systems

Study the "layout" of a State Plane Coordinate System (Colorado-Lambert and Wyoming- Transverse Mercator). The concept of projection zones, overlap, working from one zone to another will be covered.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221F0	600-800P	Th	\$11	Sylvester	2/28	1

Ground to Grid Coordinates

Starting with a ground measurement and reduction to an ellipsoid distance and then to a grid distance or vice-versa. Homework. Students will need a calculator.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221G0	600-800P	Th	\$20	Sylvester	3/6-3/13	2

Metes & Bounds and GLO

Concepts of Metes and bounds surveys will be discussed along with an introduction to mineral surveys. The GLO or North American (US and Canadian) Rectangular Survey System from the principle point through the aliquot subdivision of a section will be covered. Homework.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221H0	600-800P	Th	\$20	Sylvester	3/20-3/27	2

Geodesy and Databases

Conceptual (no math) introduction to the Clarke 1866, CRS80,1 WGS84, ITRF00, etc. ellipsoids. Basic calculations of terrestrial distances and navigation; and introduction to the PZS triangle. How did NAD'27, NAD'83, HARN, ITRS, etc. come into being? Should a surveyor convert from one to the other? Where is the data for the control points stored?

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221J0	600-800P	Th	\$11	Sylvester	4/3	1

Introduction to GPS

This is an overview of GPS covering code and phase tracking, absolute, differential and RTK positioning. Principle of satellite to ellipsoid and ground coordinate calculations. The concept of PDOP and GDOP, and the sources of errors in your data will be discussed. We will also look at the future of GPS, GLONASS and Galileo.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221I0	600-800P	Th	\$11	Sylvester	4/10	1

Using GPS in the Field

A hands on approach for using your GPS equipment efficiently and verifying your results.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221X0	600-800P	Th	\$11	Sylvester	4/24	1

Property and Legal Descriptions

Discussion of what to look for in the construction of a good property description and how to interpret existing legal descriptions.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221K0	600-800P	Th	\$11	Sylvester	5/1	1

Introduction to Boundary Law

The principles of Boundary Law explained and what role the surveyor plays within the legal system.

CLASS#	TIME	DAYS	COST	TEACHER	START/END	CLASSES
EGT221L0	600-800P	Th	\$11	Sylvester	5/8	1

Prices quoted reflect in-state tuition only - Call for out-of-state tuition rates.

Class size is limited. Pre-registration is required. Some classes require the purchase of a book/supplies.

Call (970) 874-6540 to register or for more information. Visit www.dmtc.edu