MINOR IN GEOMATICS

ABOUT THE MINOR IN GEOMATICS PROGRAM AT THE UNIVERSITY OF HOUSTON

The minor in geomatics provides a pathway with sufficient education and training to eventually becoming a Registered Professional Land Surveyor (RPLS) in Texas.

In addition to providing necessary knowledge in traditional surveying and mapping, the minor program has been designed to take full advantage of emerging technology such as LiDAR and digital imaging. Our mission is to graduate civil engineers with proficiency in surveying and mapping for the State of Texas and across the U.S.

GET AHEAD OF THE CURVE TO ADVANCE YOUR CAREER

- Learn from world-renowned experts in geospatial technology
- Earn a civil engineering degree and minor in geomatics at the same time – or, earn the minor in geomatics by itself
- Scholarships may be available to qualified students

SUPPORTED BY:

Texas Society of Professional Surveyors, Texas Department of Transportation, Harris County.
COURSES AND CURRICULUM

YEAR 1:

Fall semester:

► CIVE 3380 Fundamentals of Plane Surveying
  Introduction; Significant Figures; Observational Errors; Leveling
  Theory and Method; Equipment for Differential Leveling; Reduc-
  tion of Field Notes and Computation; Distance Measurement;
  Angles and Azimuths, Total Station and Angle Measurement;
  Traverse and Traverse Computations; Coordinate Geometry in
  Surveying; Least Squares Adjustment; Basic Principle of Laser
  Scanning and Data Acquisition; Horizontal and Vertical Curves;
  Earthwork and Volume Computations; Legal Land Surveying.

Spring semester:

► CIVE 4381 Advanced Geomatics and Geosensing
  Introduction; Coordinate Systems and Reference Frames; Map
  Projections; US State Plane Coordinates; Geodetic Position
  Computations; Introduction to Global Positioning Systems; Static
  GNSS Positioning; Kinematic GNSS Positioning; Satellite Remote
  Sensing; Laser Scanning and Photogrammetry; Introduction to
  Geographic Information Systems.

YEAR 2:

Fall semester:

► CIVE 5386 Survey Measurements and Analysis
  Matrices; Non-linear Equations and Taylor’s Theorem; Random
  vs. Systematic Errors; Propagation of Errors; Weights; Principle
  of Least Squares; Adjustment of a 1D, 2D, and 3D Network;
  Error Ellipses; Optimization.

Spring semester:

► CIVE 4382 Legal Principles and Boundary Surveying
  Land Surveying Practice and Legal Principles of Boundary
  Survey of Real Property; Lot Survey; Property Descriptions;
  Sectional Survey; The Water Boundary Survey; United States
  Public Land Survey System; Metes and Bounds; Riparian and
  Mineral Rights Surveys.

► CIVE 5375 Digital Photogrammetry
  Principles of Photography and Image Measurement Techniques;
  Fundamentals of Image Coordinates to Ground Coordinates;
  Digital Photography and Mapping; Orthophotography; Structure
  from Motion.

A TOTAL OF 15 CREDIT HOURS ARE REQUIRED
TO RECEIVE A MINOR IN GEOMATICS

FOR MORE INFORMATION

UH Department of Civil and Environmental Engineering: www.cive.uh.edu
Email: civil@egr.uh.edu

UH Department of Civil and Environmental Engineering
Engineering Building 1 | 4726 Calhoun Rd., Suite N107
Houston, Texas 77204-4003 | 713.743.4250