

## **GED 580 Analysis Models for High Precision GPS**

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### **Description:**

The concept of high precision GPS Geodesy. GPS surveying methods: campaign/episodic GPS, continuous/permanent GPS. "Precision" and "Accuracy". Accuracy of the GPS in terms of "pre-survey planning". Mathematical models that predict the accuracy of GPS. GIPSY GPS Processing. GPS Time Series Analysis. Seasonal effects in GPS time series. The effect of the tectonic motion in GPS time series. Character of residuals/the error term from GPS time series. High-rate/frequency GPS continuously operating networks. Obtaining deformation rates using campaign and permanent GPS measurements.

### **Time Table:**

Week 1: Introduction and Description of the Course

Week 2: Defining High Precision GPS

Week 3: Surveying with GPS: Survey methods, campaign GPS, continuous GPS

Week 4: "Precision" and "accuracy"

Week 5: Accuracy of the GPS in terms of "pre-survey planning" I

Week 6: Accuracy of the GPS in terms of "pre-survey planning" II

Week 7: Practical 1: Accuracy of the GPS

Week 8: GPS Processing using GIPSY I

Week 9: GPS Processing using GIPSY II

Week 10: Practical 2: GIPSY Processing

Week 11: GPS Time Series Analysis I

Week 12: GPS Time Series Analysis II

Week 13: Practical 3: GPS Time series analysis

Week 14: Practical 3: GPS Time series analysis

Week 15: Crustal Deformation Monitoring Using GPS