

GEOS 458/658: Geoscience Application of GPS and GIS, 3 Credits

Department of Geology & Geophysics, Univ. Alaska Fairbanks

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(Lectures: WF 1300-1400 in Reichardt Rm. 233; Labs: W 1415-1715 in Reichardt Rm. 316)

Fri	Jan 21	Lec. 1: Gen Intro; What is GIS; Data Types
Wed	Jan 26	Lec. 2: Data Formats
Wed	Jan 26	Lab 1: Internet resources
Fri	Jan 28	Lec. 3: Applied GIS and Project Ideas
Wed	Feb 2	Lec. 4: Excel and Basic Programming
Wed	Feb 2	Lab 2: Excel with VB Macros
Fri	Feb 4	Lec. 5: Intro to Arc GIS and Internet based map servers
Wed	Feb 9	Lec. 6: Databases and MS Access
Wed	Feb 9	Lab 3: From text to GIS via excel and MS Access
Fri	Feb 11	Lec. 7: Map Projection
Wed	Feb 16	Lec. 8: Datum transformations and AK specific issues
Wed	Feb 16	Lab 4: Introduction to ArcGIS: plotting points on map
Fri	Feb 18	Lec. 9: GIS Analysis 1
Wed	Feb 23	Lec. 10: GIS Analysis 2
Wed	Feb 23	Lab 5: Arc GIS: Parsing Data, digitizing, simple spatial analysis
Fri	Feb 25	Lec. 11: GPS 1
Wed	Mar 2	Lec. 12: GPS2
Wed	Mar 2	Lab 6: GPS with Garmins
Fri	Mar 4	Lec. 13: GPS with Trimbles
Wed	Mar 9	*****Spring Break*****
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Fri	Mar 11	*****Spring Break*****
Wed	Mar 16	Lec. 14: Accuracy, reliability, gridding, contouring
Wed	Mar 16	Lab 7: GPS Differential correction
Fri	Mar 18	Lec. 15: Remote Sensing
Wed	Mar 23	Lec. 16: DEMs and derivative products
Wed	Mar 23	Lab 8: 3D drape and flythrough with Arc Scene
Fri	Mar 25	Lec. 17: Google Earth and other Visualization Environments
Wed	Mar 30	Lec. 18: Recap + Projects
Wed	Mar 30	Lab 9: Industry Visit

Fri	Apr 1	Lec. 19: GIS application (guest)
Wed	Apr 6	Lec. 20: Geodatabase
Wed	Apr 6	<u>Lab</u> 10: Project Work
Fri	Apr 8	Lec. 21: Cartographic principles
Wed	Apr 13	Lec. 22: Effective Map Presentation
Wed	Apr 13	<u>Lab</u> 11: Map Composition, labeling
Fri	Apr 15	Lec. 23: GIS software packages + student projects
Wed	Apr 20	Lec. 24: Project work
Wed	Apr 20	<u>Lab</u> 12: Project work
Fri	Apr 22	*****Spring Festivus*****
Wed	Apr 27	Lec. 25: Report Writing, Presentation and Poster
Wed	Apr 27	<u>Lab</u> 13: Map export and Product Refining
Fri	Apr 29	Lec. 26: Industrial application of GIS
Fri	May 6	Finals