

NRM 435 GIS Analysis Spring 2019

Jan. 14 - Apr. 29, 2019

Course Goals:

- To learn GIS analysis concepts independent of GIS software .
 - To apply conceptual tools using ArcGIS software.
 - To maximize hands-on experience in using GIS to solve spatial problems.
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Instructors:

Dave Verbyla, Professor,
Dept. of Natural Resources Management, O'Neill Bldg 368
Email: dverbyla@alaska.edu

Office Hours: Most days by email appointment so we can screen-share.

I will try my best to answer emails within 24-hours.

Disability Services: I will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to to any student with a disability.

Please inform us the first week of class if you have a disability that we should be aware of.

Grading will be based on 500 total possible points from

- Fifteen GIS quizzes (posted every Weds by 8am, due by Friday 5pm) (@ 20 pts each) = 300 points
- Ten blackboard assignments (@20 pts each) = 200 points (<https://classes.alaska.edu>)
 1. ArcGIS / Tables Analysis Quiz due 5pm Tuesday 22-Jan-2019
 2. Points Analysis Quiz due 5pm Tuesday 29-Jan-2019
 3. Lines Analysis Quiz due 5pm Tuesday 5-Feb-2019
 4. Linear Referencing Quiz due 5pm Tuesday 12-Feb-2019
 5. Network Analysis Quiz due 5pm Tuesday 19-Feb-2019
 6. Polygons Analysis Quiz due 5pm Tuesday 26-Feb-2019
 7. Temporal Analysis Quiz due 5pm Tuesday 19-March-2019
 8. Raster Analysis Quiz due 5pm Tuesday 2-April-2019
 9. Elevation Analysis Quiz due 5pm Tuesday 9-April-2019
 10. 3D Analysis Quiz due 5pm Tuesday 23-April-2019

Late assignments will not be accepted.

Final Grade: Total Points:

A+: >474 A: 450-474 A-: 440-449

B+: 435-439 B: 425-434
C+: 400-419 C: 375-399 C-: 365-374
D 350- 364
F <350

Weekly lectures (view by Wednesday)	Weekly ArcGIS Quiz (posted by 8am every Wednesday)	Practice Lab (do before weekly ArcGIS quiz)
<p>Week 1 Learning Objectives</p> <p>16-Jan-2019:</p> <p>Course Preview</p> <p>Customizing ArcMap Windows</p> <p>Geoprocessing Tips in Arcmap</p> <p>How to Select Features</p> <p>Working With Tables</p> <p>Point Analysis Tools</p>	<p>2018 Points Quiz</p> <p>Key: 2018 Points Quiz</p>	<p>Point Analysis Lab</p>
<p>23-Jan-2019</p> <p>Week 2 Learning Objectives</p> <p>More Point Analysis Tools:</p> <p>Uniform and Random Sample Locations</p> <p>Computing Point Density</p> <p>Interpolating Point Quantities</p>	<p>2018 Points Density Quiz</p> <p>Key: 2018 Points Quiz</p>	<p>Point Analysis2 Lab</p>
<p>30-Jan-2019:</p> <p>Geoprocessing Lines:</p> <p>Line Direction and Intersection</p> <p>Converting Lines to Points, Points to Lines</p> <p>Splitting Lines</p>	<p>2018 Lines Quiz: Weeds Near Highways</p> <p>Key: 2018 Lines Quiz</p>	<p>Line Analysis Lab</p>

<p>6-March-2019:</p> <p>Temporal Data in ArcGIS:</p> <p>Date and Time Functions in Arcmap Field Calculator</p> <p>Computing Speed Using Temporal Data</p> <p>Animating Discrete Point Events</p> <p>Animating Moving Points</p> <p>Animating Changing Point Sensor Values</p> <p>Animating Changing Lines or Polygons</p>	<p>Temporal Quiz 2018</p> <p>Key 2018 Temporal Quiz</p>	<p>Animal Movement Lab</p>
<p>Spring Break</p>	<p>Spring Break</p>	<p>Spring Break</p>
<p>20-March-2019:</p> <p>Raster Analysis:</p> <p>Creating A Test Raster</p> <p>Querying Rasters</p> <p>Raster Calculator</p> <p>Using Points and Polygons With Rasters</p> <p>Raster Distance Analysis</p> <p>Raster Area Analysis</p> <p>Reclassifying Rasters</p>	<p>Raster Analysis Quiz 2018</p>	<p>Raster Analysis Lab</p>
<p>27-March-2019:</p> <p>Optimal Paths Cost Rasters</p>	<p>Optimal Path Quiz 2018</p>	<p>Cost Path Lab</p>
<p>3-April-2019:</p> <p>Lidar Analysis:</p> <p>Simulating First Return/Last Return Rasters</p> <p>Delineating Tall Patches</p> <p>Mapping Percent Forest Canopy Closure</p>	<p>2018 LIDAR Quiz</p>	<p>LIDAR Elevation Lab</p>

<p>10-April-2019:</p> <p>Watershed Delineation :</p> <p>Processing Elevation Rasters To Square Pixels in Meters</p> <p>Hypsometric Symbology With Elevation Rasters</p> <p>Delineating a Watershed in Arcmap</p>	<p>2018 Watershed Quiz</p>	<p>Watershed Delineation Lab</p>
<p>17-April-2019:</p> <p>3-D Analysis :</p> <p>3D Points</p> <p>3DLines</p> <p>3D Polygons</p> <p>3D Surfaces</p> <p>3D Triangulated Irregular Networks (TINS)</p>	<p>2018 3D QUIZ</p>	<p>3-DAnalysis Lab</p>
<p>24-April-2019:</p> <p>GIS Data Quality Assessment</p>	<p>Quiz 14 and Quiz 15 due 5pm Tuesday May 1, 2019</p> <p>2018 Quiz 14: Point/Polygon Analysis</p> <p>2018 Quiz 15: Raster Analysis</p>	<p>GIS Quality Assessment Lab</p>