

Winter 2022 - GEOM 2008 Raster GIS: Pixels and Grids

Department of Geography and Environmental Studies

Instructor: Koreen Millard koreenmillard@cunet.carleton.ca

Office: Loeb A301D

Office hours: TBD

Lecture Dates: Thursdays, 14:35 - 16:25

Lecture Location: Southam Hall 517

Lab Dates: A1: Mondays 09:35 - 11:25 am

A2: Wednesdays 08:35 - 10:25 am

Lab Location: Loeb A200

Description: Storage, visualization, manipulation, and analysis of gridded geospatial data; 3D raster visualization; digital terrain analysis; interpolation and filtering; raster geoprocessing and projections; selected topics in raster GIS such as least-cost path analysis, natural hazard assessment, pollution mapping, and hotspot analysis. This course will introduce the raster GIS data format and analysis techniques. Labs will be completed in ArcGIS Pro and QGIS.

Prerequisite(s): GEOM 1004 or permission of the Department.

Evaluation

8 Labs at 5% each = 40%

10 quizzes at 2% each = 20%

1 practical mid-term test = 10%

1 final group project = 30%

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Course calendar (**tentative: dates and topics subject to change**):

| Week | Topic |
|------|---|
| 1 | Welcome + Storage, visualization, manipulation, and analysis of gridded geospatial data |
| 2 | Projections and Coordinate Systems |
| 3 | 3D raster visualization |
| 4 | digital terrain analysis |
| 5 | natural hazard assessment |
| 6 | least-cost path analysis |
| 7 | Winter Break |
| 8 | interpolation and filtering |
| 9 | Site Suitability Assessment |
| 10 | hotspot analysis 1 |
| 11 | Hotspot analysis 2 |
| 12 | Introduction to working with imagery |
| 13 | Present Final Project |