

Environmental Analysis using GIS

2:10 - 3:00 PM M,W Lecture

3:10 - 6:00 PM M,W Laboratory Sciences Lab Building 2020 & Hunt Hall 253 (section 02)

Instructor(s): Professor Isaya Kisekka

4 Units

COURSE SCHEDULE

Week 1

Lecture 1: Review of GIS concepts
 Lecture 2: GIS Modeling:
 LAB 1: Creating a simple suitability model

Week 2

Lecture 3: Geostatistical interpolation in GIS
 Lecture 4: Application of interpolation in environmental analysis
 LAB 2: Interpolation in GIS

Week 3

Holiday: Martin Luther King, Jr. Day
 Lecture 5: Python scripting for geoprocessing workflows
 LAB 3: Geoprocessing using python

Week 4

Lecture 6: Introduction to deep learning in ArcGIS Pro
 Lecture 7: Deep learning application to vegetation health
 LAB 4: Deep learning using ArcGIS Pro

Week 5

Lecture 8: Hydrologic analysis in ArcGIS Pro
 Lecture 9: Predicting floods
 LAB 5: Hydrologic analysis

Week 6

Lecture 10: Water quality analysis
 Lecture 11: Guest lecture: Nitrate Leaching in Central Valley
 LAB 6: Water quality

Week 7

Holiday: Presidents' Day
 Lecture 12: Midterm

Week 8

Lecture 13: Introduction to image classification
 Lecture 14: Land cover analysis using ArcGIS Pro
 LAB 7: Classify land cover change

Week 9

Lecture 15: Wild fire risk assessments using ArcGIS Pro
 Lecture 16: Guest lecture
 LAB 8: Calculate landslide risk from world fires

Week 10

Lecture 17: Updating real-time data in ArcGIS Pro
 Lecture 18: Final exam review
 LAB 9: Predict weather with real-time data

Finals Week

Date and time of final exam to be determined

Grading

Lab: 45%

ABT/HYD 182

Winter Even Years

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Midterm: 25%

Final: 25%

Attendance: 5%