

**TITLE: GIS Programming**

**NUMBER: NRM 638**

**CREDITS: 3**

**PREREQUISITES: Basic ArcGIS experience**

**LOCATION: Distance Delivery from Fairbanks campus**

**MEETING TIME: Spring Semester 2019**

**INSTRUCTOR: Dr. David Verbyla**

**OFFICE LOCATION: ONEILL 368**

**OFFICE HOURS: most any day by email appointment, we can connect, and screen share remotely via Google Hangouts or I will answer your questions via email**

**(I try to return emails within 24 hours of receiving them)**

**TELEPHONE: 907-474-5553**

**EMAIL ADDRESS: dlverbyla@alaska.edu**

#### **COURSE DESCRIPTION**

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**This course is primarily for graduate students and GIS professionals who want to learn Python scripting applications in natural resource management using ArcGIS.**

**The class will be taught using a sequence of weekly video sessions through the UA blackboard website <https://classes.alaska.edu>.**

**After each video session, you will take a blackboard quiz assessing your understanding. After you successfully answer the quiz questions, you will receive access to the next video session. You can take each blackboard quiz as many times as needed to succeed (the blackboard quizzes do not count towards your grade).**



## **INSTRUCTIONAL METHODS**

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Each week will be a series of video sessions with each session leading the student in a hands-on Python scripting exercise. The student must successfully answer a blackboard question after each video session in order to access the next video session.

## **COURSE SCHEDULE**

**Week1: Python basics**

**Week2: Using the ArcGIS field calculator with Python scripts**

**Week 3: Getting GIS point, line, polygon, and table information**

**Week 4: Creating GIS tables and point, multipoint, polyline, polygon feature classes**

**Week 5: Updating and querying GIS tables and feature classes**

**Week 6: Creating random locations and random selections**

**Week 7: Arcpy Feature Class Geoprocessing**

**Week 8: Arcpy Raster Geoprocessing**

**Week 9: Working with Arcmap Map Documents**

**Week 10: Basic ArcGIS Python Script Tools**

**Week 11: Advanced ArcGIS Python Script Tools**

**Week 12: ArcGIS Python Toolbox**

**Week 13: ArcGIS Python Addins**

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## **COURSE POLICIES**

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### **Participation**

You will use ArcGIS and follow along as I teach you new concepts in each video session. After each video session, I will assess your understanding using a question posted through the class blackboard website. Your understanding will also be assessed using a weekly quiz posted through the class blackboard website.

You should post any sources of confusion and solutions through the class Google+ site to share learning among class participants.

### **Late Work Policy**

Late work will not be accepted, since some weekly sessions assume you have mastered previous weekly sessions.

### **Academic Integrity**

As described by UAF, scholastic dishonesty constitutes a violation of the university rules and regulations and is punishable according to the procedures outlined by UAF.

Scholastic dishonesty includes, but is not limited to, cheating on an exam, plagiarism, and collusion. Cheating includes providing answers to or taking answers from another

attribution. Collusion includes unauthorized collaboration with another person in

## **EVALUATION POLICIES**

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Course grade will be based on total points earned based on weekly scripting assignments (@10 points each Python script). Late submissions will not be accepted.

### **Total Points Grade:**

<b>&gt;=93%</b>	<b>A</b>
<b>85-93%</b>	<b>B</b>
<b>75-85%</b>	<b>C</b>
<b>65-75%</b>	<b>D</b>
<b>&lt;65%</b>	<b>F</b>

## **EFFORT AND STUDENT INVOLVEMENT**

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**SUPPORT SERVICES**

**UAF eLearning Student Services**

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