ARCHY 484
Archaeological GIS

Quarter: Wi 19
Time: 09:30– 11:50 MW
Room: DIGAR LAB, Denny Hall #457

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hours: TBA and by appointment

INTRODUCTION

The 80s saw the introduction of GIS to archaeology, but it was during the 90s that GIS became a hot topic in the discipline. Today no one denies that GIS are a useful tool for archeologists--no modern survey or landscape project would be undertaken nowadays without recourse to one. It is safe to say that 90% of GIS are still used to store and generate all kinds of maps. However, GIS provide powerful methods for integrating, deriving, analyzing, and modeling spatial information. This course concentrates on the use of GIS for basic archaeological analytical purposes.

COURSE AIMS

The main aim of the course is to provide you with a solid understanding of existing uses of GIS in archaeology, with emphasis on regional analysis and landscape archaeology. While we will be going over basic operations (through online tutorials) these will be covered rather quickly. **If you do not have any experience using GIS (in particular ArcGIS) you will be expected to make-up for this during the earlier part of the course**. The course has the following specific aims:

- To become familiar with basic geospatial terms and concepts.
- To learn the basics of building a modern project spatial database
- To correctly conduct basic GIS operations commonly associated with archaeological projects.
- To understand the challenges of working with several archaeological spatial data.
- To learn about the major applications of GIS in archaeology..
- To get hands-on experience and basic mastery of current GIS software (ESRI ArcGIS 16.1).

TENTATIVE COURSE SCHEDULE

Use the following chart to see the overall organization of the course. **Be aware that the days identified in this schedule are subject to change to accommodate for changes along the course!!**

TENTATIVE SCHEDULE

	DATES		TOPIC	EXAM	QUIZ	HW
wk1	7-Jan	Mon	Intro to Course		1	1
	10-Jan	Wed	Intro to GIS			
wk2	14-Jan	Mon	Building a Project DB I		2	2
	17-Jan	Wed	Building a Project DB II			
wk3	21-Jan	Mon	No Class		3	3
	23-Jan	Wed	Building a Project DB III			
wk4	28-Jan	Mon	Building a Project DB IV		4	4
	30-Jan	Wed	GIS + Survey I			
wk5	4-Feb	Mon	GIS + Survey II		-	-
	6-Feb	Wed		Out: EXAM 1		
wk6	11-Feb	Mon	GIS Survey III		5	5
	13-Feb	Wed		In: EXAM 1		
wk7	18-Feb	Mon	No Class		6	6
	20-Feb	Wed	Accessibility Analysis			
wk8	25-Feb	Mon	Visibility Analysis		7	7
	27-Feb	Wed				
wk9	4-Mar	Mon	Geoprocessing I		8	8
	6-Mar	Wed				
wk10	11-Mar	Mon	Geoprocessing II		-	-
	13-Mar	Wed		Out: EXAM 1		
wk11	18-Mar	Mon	FINALs		-	-
	20-Mar	Wed		In: EXAM 2		

No Class
Out: Home Exam posted
In: Submit Home Exam

Class requirements include the following:

>   - Active class participation (10%).
>   - Online quizzes (14%)
>   - Homework (42%)
>   - Exams (34%).

All assignments are meant to be completed individually by each student.

Details on each of these requirements are provided below:

Class Participation - CP (10 %):

Given the hands-on nature of this course, it is essential that you attend each class. Typically, each class will consist of a lecture period followed by a hands-on session. As part of your class participation, you are expected to:

>   Arrive on time.
>   Participate in any class discussions.
>   Finish up any tutorials that have not been completed during the class period.

Online Quizzes – OQ (7 x 2%= 14 %)

You will have **eight timed** quizzes throughout this class (at most one per week). Each quiz will consist of a set of multiple choice, true/false and/or one-line answer questions. These will be posted on the last day of instruction of the week (usually Wednesday) and should be timely submitted before the beginning of the first class the following week (following Monday). These are aimed at examining your knowledge of the material cover in class lectures. The quiz with the lowest score will be dropped automatically.

Quizzes will be graded 0-100%

Homework – HW (7 x 6% = 42 %)

A large portion of your class grade will be based on completing **eight homework assignments** throughout the quarter. These will be posted on the last day of instruction of the week (Wednesday) and should be timely submitted before the beginning of the first class the following week (following Monday). The aim of these exercises is to reinforce what you have learned in class. The homework with the lowest score will be dropped automatically.

Submissions will be done via a **single** electronic document in **pdf format**. This document will typically consist of a mixture of short paragraphs describing the steps you followed to resolve a specific task accompanied by a screenshots illustrating this process. Keep in mind the following when creating this document.
- Use some numeric system to number each step
- When creating screenshots make sure that the results (or whatever you are documenting) is legible.

As with your exams, before submitting you should take a final look at your work in order to make sure that it is correct, complete and legible. Failure to do so may harm your grade. If you do not know how to generate a pdf document from Word or to generate screen captures from the computer contact either the TA or the instructor.

Homework will be graded 0-100%

Home Exams – HE (2 x 17% = 34 %)

You will have two exams, a midterm and a final exam, which will be posted online (check course schedule). Once these are posted you will have a week to complete them. The aim of these exams is to test your ability to resolve questions similar, though not the same, to those you have are encountered throughout the course. Submission will be done electronically and will typically consist of a mixture of screen captures, maps, charts and written text all submitted in **pdf format**.

While the homework is meant to reinforce what you have learnt in class, exams are meant to test your ability to make decisions and put into practice what you have learnt without much guidance.
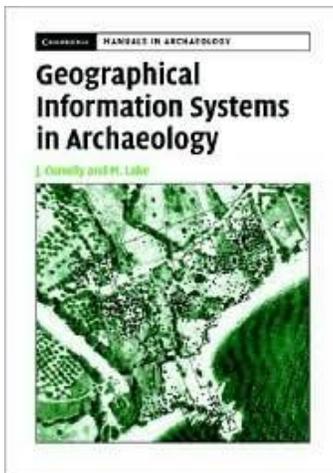
As with your homework it is highly recommended that before you submit your work you take a final look at it in order to make sure that it is correct, complete and legible.

Exams will be graded 0-100%

CLASS AND TEACHING OVERVIEW
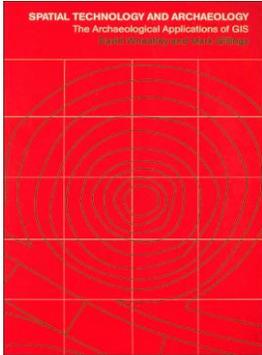
Textbooks

The main textbook we will be using:

Connolly, J. and Lake. M. 2006. Geographical Information Systems in Archaeology (Cambridge Manuals in Archaeology). Cambridge: Cambridge University Press

This is the most recent book on GIS in archaeology by two archeologists (but it is now old!). It provides a comprehensive overview on the different ways in which GIS has been applied in archaeology. It covers other

related material commonly associated with GIS, like spatial statistics. It also provides some technical discussion on basic GIS concepts. This book does not show you how to do things (this ultimately depends on what software you use) but it is a good book to use as reference to many issues surrounding the use of GIS in archaeology.

Another book you might find useful…

Wheatley, D and Gillings, M. 2002. *Spatial Technology and Archaeology: The Archaeological Applications of GIS*. London: Routledge

This was the first textbook that dealt with GIS and archaeology. It is less technical and not as thorough as the Connolly and Lake's book above but some students may find it easier to read

Nowadays there are many books regarding GIS and archaeology. Many of them are edited volumes though you will also find some a bit more specialized (e.g. predicted modeling, etc).

Academic Honesty:

All students will uphold the University of Washington standards of student conduct (http://www.washington.edu/students/handbook/conduct.html). The following web site has information on plagiarism, cheating, and guidelines for collaboration:
http://apps.leg.wa.gov/WAC/default.aspx?cite=478-121-107

Accessibility:

Please let me know if you need accommodation of any kind. We can work with the University of Washington Disabled Resources for Students (DRS) to provide what you require. The DRS webpage is
http://www.washington.edu/students/drs/

Late assignments:

Assignments handed in late will automatically lose 10% of the possible credit, and 10% more with each subsequent day that they are late. **Assignments later than 2 days will not be accepted.** *No make-ups are provided for missed assignments in the absence of documented and legitimate medical or family emergencies.*

Class expectations:

The University of Washington is committed to fostering an environment where the free exchange of ideas is an integral part of the academic learning environment. Disruption or domination of classroom discussions can prohibit other students from fully engaging and participating. Any student causing disruption may be asked to leave any class session, and, depending on the severity and frequency of that behavior, an incident report may be filed with Community Standards and Student Conduct. As a condition of enrollment, all students assume responsibility to observe standards of conduct that will contribute to the pursuit of academic goals and to the welfare of the academic community. For more detailed information on these standards, please visit:
http://apps.leg.wa.gov/WAC/default.aspx?cite=478-120.

Use of class slides and study guides:

Slides are meant to help students process information and prepare for any tests. The slides and study guides are for study purposes only. **They are not to be distributed outside of class, posted on the internet, or shared with third-parties outside of class without the explicit permission of the lecturer.**

Please refrain from using your cell phone in class and/or to use your laptop for anything but class related activities.

COURSE WEBPAGE + INFORMATION

Course website will be accessed through UW canvas. You should have received an email explaining how to login by now if not let me know.

Use the following formula to keep track of your grade (G):

G=   0.1 * CP +
       $0.02 * Q1 + 0.02 * Q2 + 0.02 * Q3 + 0.02 * Q4 + 0.05 * Q5 + 0.02 * Q6 + 0.02 * Q7 +$
       $0.06 * HW1 + 0.06 * HW2 + 0.06 * HW3 + 0.06 * HW4 + 0.06 * HW5 + 0.06 * HW6 + 0.06 * HW7 +$
       $0.17 * HE1 + 0.17 * HE2$

Use the following grade scale comparison to monitor your progress through the course. However, keep in mind that this table IS ONLY A GUIDE, final grades may fluctuate slightly.

UW	%	Letter	Criteria
3.9 - 4.0	95 - 100	A	Superior performance in all aspects of the course with work exemplifying the highest quality. Unquestionably prepared for subsequent courses in field
3.5 - 3.8	90 -94	A-	Superior performance in most aspects of the course; high quality work in the remainder. Unquestionably prepared for subsequent courses in field
3.2 - 3.4	85 – 89	B+	High quality performance in all or most aspects of the course. Very good chance of success in subsequent courses in field
2.9 - 3.1	80 – 84	B	High quality performance in some of the course; satisfactory performance in the remainder. Good chance of success in subsequent courses in field
2.5 - 2.8	75 – 79	B-	Satisfactory performance in the course. Evidence of sufficient learning to succeed in subsequent courses in field
2.2 - 2.4	70 – 74	C+	Satisfactory performance in most of the course, with the remainder being somewhat substandard. Evidence of sufficient learning to succeed in subsequent courses in field with effort
1.9 - 2.1	65 – 69	C	Evidence of some learning but generally marginal performance. Marginal chance of success in subsequent courses in field
1.5 - 1.8	60 – 64	C-	Minimal learning and substandard performance throughout the course. Doubtful chance of success in subsequent courses
1.2 - 1.4	55 – 59	D+	Minimal learning and low quality performance throughout the course. Doubtful chance of success in subsequent courses
0.9 - 1.1	50 -54	D	Very minimal learning and very low quality performance in all aspects of the course. Highly doubtful chance of success in subsequent courses in field
0.0 - 0.8	50 -	D- to E	Little or no evidence of learning. Poor performance in all aspects of the course. Totally or almost totally unprepared for subsequent courses in field

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Grade Revision Policy. I am open to reviewing a grade if you feel that your grade was unexpected or undeserved. If so follow the procedure outlined here.

- Submit in writing (paper or email) a (maximum) one page describing what grade you found to be unexpected together with your graded work. Make sure you point out concrete aspects where your judgment dissents from mine. Your argument should not be a matter of opinion but rather based on some concrete argument. Provide any documentation necessary to support your case (e.g. notes, books, previous drafts, class material, etc.) so that we can both review it together.
- I will contact you to set an appointment so that we can review and discuss the material together.
- Do not haggle for points! Fishing for points is simply uncool.

DigAR Lab Policy

The **Dig**ital **A**rchaeology **R**esearch **Lab** has been set up primarily for conducting research in computer modeling in Archaeology.

During the period of this class you will be given an access code to enter the lab any time Condon Hall is open. I you need **to secure access to the building for afterhours please let us know during the first week**. You will also be allocated space in the *digar* server in order to store any information.

While you will obviously use other software like word processing and graphical software for your work, please refrain from using it just for that. The lab was set up for research in GIS, computational and mathematical applications in archaeology.

Funds to run the lab are very limited so please, please, please, please take good care of the computers and the lab in general.

Keep the following rules in mind:

- No eating in the classroom space of the lab!
- Make sure you do not leave any trash behind you!
- You can bring in drinks into the lab provided they are inside some container that is 'spill-safe'.
- Do NOT shut down the computer after you have finished just log off
- Tuck your seat under the desk before you leave the lab

In case anything goes wrong (technical problem) and no one is immediately available a message immediately to the TA (Mikhail Echavarri, mechav2 [at] uw.edu). Make sure you CC the message to Jay Flaming (jflaming[at]uw.edu) and the instructor (mllobera[at]uw.edu).