QUANTITATIVE AND FORMAL METHODS IN ARCHAEOLOGY
ASM 565, Fall 2021, 91981

Course Meetings: Wednesdays: 9:45-12:30, Cowden 124

Instructor: Michael Barton

Office: SHESC 152/ECA 105

Contact Info: michael.barton@asu.edu

Office Hours: Monday, 11-12 at ECA 105; Wednesday, 1:30-2:30 at SHESC 152, or by appointment

Course Overview

Course Description

Quantitative and Formal Methods in Archaeology is an intensive introduction to the use and presentation of quantitative methods and formal analysis for archaeological research. In this course, basic to intermediate statistical concepts will be discussed with emphasis on the role of quantitative methods in solving real archaeological problems. The course also projects a philosophy for the quantitative analysis of archaeological data. The course consists of a mix of lectures and hands-on activities using real data.

Course Goals

The overarching goal of this course is for students to become both critical readers of arguments relying on quantitative techniques and also for students to learn how to find, use, and present appropriate techniques to address substantive archaeological questions in their own research. This course is as much about the clear presentation of quantitative arguments as it is about the methods themselves. In many cases, simple visuals may be preferable to complex quantitative methods. I hope to help students build an intuition on when and how to use quantitative approaches for different audiences.

Learning Outcomes

By the end of this course, each student will have demonstrated that they are able to:

- Read and critically evaluate quantitative arguments in the scientific literature.
- Process complex data and conduct analysis using a range of software packages.
- Apply, interpret, and thoroughly explain quantitative techniques for analyzing patterns in archaeological/other data.
- Understand the theoretical and practical application of multi-variate statistical techniques for both exploratory analysis and hypothesis testing.
- Make clear and concise substantive arguments relying on quantitative techniques and visuals.

- Find and implement techniques appropriate for addressing substantive research questions.

Pre-requisites

No prerequisites. A basic knowledge of computers is assumed, but no prior knowledge of statistics or programming is required. I anticipate that some students will have little such experience. However, the course will require a substantial commitment of time, including extensive use of computer programs that may be new to many of you. Those of you who are not archaeologists may also have questions about the nature of archaeological data and interpretations. Rest assured that I am here to help.

Special Health and Safety Information for Fall 2021

The **ASU Face Cover Policy** (https://www.asu.edu/about/fall-2021#face-coverings) requires the wearing of face covers in the majority of classrooms, teaching laboratories, studios and workshop settings. The space for this class has been designated as a space requiring face covers. Please wear a face covering over your nose and mouth at all times during class for the health and safety of yourself and others.

READ ADDITIONAL, IMPORTANT COURSE AND UNIVERSITY POLICIES LISTED AFTER THE COURSE OUTLINE BELOW

Course Resources

Required Texts

Readings for this course come from two main texts. **1) *Quantifying Archaeology*** by Stephen Shennan (1988, 1997, 2003) and **2) *Quantitative Methods in Archaeology Using R*** by David L. Carlson (2017). The Shennan book is available for free to ASU students at the link below, but you may want to find a used paperback copy as this is a useful reference you will likely use frequently. The Carlson book can be purchased from many online book-sellers for about $30 and should be available on campus.

Shennan, Stephen (1988, 1997) *Quantifying Archaeology.* University Press of Edinburgh, Edinburgh.

- First edition available online for free here with ASU login: http://www.sciencedirect.com/science/book/9780126398601
- David Carlson has also written an excellent R companion to this book available here: http://people.tamu.edu/~dcarlson/quant/Shennan/QuantifyingArchaeologyR.pdf

Carlson, David L. (2017) *Quantitative Methods in Archaeology Using R*. Cambridge Manuals in Archaeology, Cambridge University Press, Cambridge.

- Carlson has provided all of the scripts and data used in this book online:
- https://sites.google.com/a/tamu.edu/dlcarlson/home/r-project-for-statistical-computing/using-r

Journal Papers

Additional readings are in the form of journal papers that help exemplify the application of different analytical methods in archaeological contexts. References are provided in the syllabus and the papers are available online in Canvas.

Software: R + RStudio

The tutorials, in class examples, and problem sets will use **R and RStudio**, powerful and **free** data science packages. For this course you will need access to a computer with a recent installation of R (version 4.1 or later) and RStudio (1.4 or later). Although you can use other software packages, you will need to arrange an alternative way to submit your assignments and I may not be able to help you troubleshoot in other packages.

R is an open-source statistical computing and data analytics platform that is popular in archaeology, data science, and most other scientific fields. R is available for Windows, MacOS, and Linux in a variety of formats.

RStudio is a front end for R with many features that enhance the usability of R. This is the primary software we will work with in this course. You must complete all assignments in an RMarkdown format that can be read by RStudio.

Download and install the latest version of R from here: https://cran.r-project.org/

Then download and install R-Studio from here: https://www.rstudio.com/products/rstudio/

ADDITIONAL USEFUL RESOURCES ARE LISTED AFTER THE COURSE OUTLINE BELOW

Course Organization, Expectations, and Grading

Course Format

Weekly class sessions will typically be divided into lecture along with a seminar style discussion of readings including both general methodological readings and good examples of the application of particular techniques. It is ***essential*** that you read before coming to class and that you are prepared to discuss what you have read. In most class sessions we will also have a hands-on lab section where we will explore methods using real archaeological data. These labs will guide you through examples similar to your problem set assignments. Later in the semester, we will also often reserve time for discussion/workshopping of analytical issues that students in the class are facing.

Coursework

Final grades for this course will be based on:

1) **Seven short problem sets** and write-ups using analytical methods discussed in class (70%)
2) **A final project** in the form of a professional poster presentation or paper (SAA/AAA style) using techniques covered in this class to analyze real data to address an archaeological question (20%)

3) **Active participation** in class discussions and labs. Active participation entails coming prepared with questions and/or comments and being prepared to discuss all readings each week. (10%)

Problem sets. The problem sets involve the application of a variety of quantitative techniques to archaeological data in a format to enable reproducible research. These problem sets will be assigned several weeks over the course of the semester (see Canvas for schedule) and will be due in class on the designated date, usually one week (minimum) from the day they are assigned.

Problem set grades are based both on the quality of the analysis of the data *and more importantly* the quality of the argument that is made concerning the anthropological questions.

All problem sets must be done as RMarkdown documents unless there is explicit prior arrangement with the instructor.

You will need to show all your work in a RMarkdown document. While this can be a separate document from your write up, you can also write your text and create all figures and tables in the same RMarkdown document. I strongly encourage you to use RMarkdown for your entire problem set write up. Figures and tables need not be of publication quality, but should always be clear and well-labeled. The text of the problem sets should be typed and the **text of the write-up should not exceed two single-spaced pages of text and code (11 point or larger, 1" margins) in RMarkdown format**, unless otherwise specified in the assignment, exclusive of figuresand tables.

I mean this about the page limit; longer papers will be down-graded or read only to the page limit (with the same effect).

In your write-ups, you should be thorough in answering all questions posed in the assignment, and you should present your results in a brief essay that references supporting tables and figures. You should briefly (no more than a paragraph) state the problem and you may assume the reader has a reasonable knowledge of the methods we have discussed. You must compactly and precisely state what the procedures that you employ actually do (look at the Kintigh 2005 article for examples). You must be very clear about exactly which procedures have been employed (don't say correlation if you mean the product moment correlation coefficient; don't say factor analysis if you mean principal components analysis), the set of data analyzed (did you exclude any outliers?) along with any transformations of the data you have done. Most importantly you must state *exactly what has been shown quantitatively, and exactly what of substance you conclude and why you conclude it*. It is usually the not case that a specific quantitative result entails a self-evident substantive conclusion in the context of an archaeological argument.

To repeat, unless otherwise requested in the assignment, *you should present the results in the context of an argument,* as you would in a published article (other than giving somewhat less background on exotic methods). If they are not specifically requested, *do not* include tables or figures or other results that are not referenced in–or necessary to–your argument.

On Canvas, I have posted an article by Keith Kintigh on writing about quantitative analysis (and in general in archaeology) that was published in the *SAA Archaeological Record* along with George Cowgill's list of the things to remember about quantitative methods when you have forgotten everything else. *I suggest that you read those two essays and take them to heart.*

You may wish to coordinate your work times with other members of the class so you can discuss any problems that arise. While I encourage you to discuss the methods and issues and help each other with computer problems, you will need to execute the procedures and write up the problems sets independently. Again for your own protection, you should keep a copy of everything you hand in, and you should keep your graded assignments at least until grades are finalized at the end of the semester, and in the event you wish to contest any grades.

Term Project. This is not an ordinary seminar class term project, but smaller in scope and length. It accounts for only 20% of your grade. I do not expect this to be a major paper, but instead an examination of a small question, supported by a careful, quantitative analyses of real archaeological data. You may use your own data or I have several data sets you can use. You should produce a paper of about 5 double spaced pages plus figures and tables. This does not need to be in RMarkdown format, but it can be if you'd like. You can start with a question and do the analysis or you proceed inductively and start with the dataset and find something interesting that you can say. In the end you should have a simple knowledge claim that you can express, preferably in a sentence and in no more than a paragraph. Your paper should explain why that is an interesting claim and then provide quantitative support (though not necessarily statistical tests). You will then present your brief paper to the class with a 10 minute presentation followed by questions. The term project grade will be evaluated as 5 points on the presentation to the class and 15 on the written paper.

Final Grades

A-/ A / A+	89.5-92.4/ 92.5-97.4/ 97.5-100	Excellent
B- / B / B+	79.5-82.4/ 82.5-87.4/ 87.5-89.4	Good
C / C+	69.5-77.4/ 77.5-79.4	Average
D	59.5-69.4	Passing
E	<60	Failure
XE		Failure due to Academic Dishonesty

Extra Credit

There will be no extra credit opportunities assigned for this course.

Incompletes

A mark of "I" (incomplete) is given by the instructor when you have completed most of the course and are otherwise doing acceptable work but are unable to complete the course because of illness or other conditions beyond your control. You are required to arrange with the instructor for the completion of the course requirements. The arrangement must be recorded on the Request for Grade of Incomplete form (http://students.asu.edu/forms/incomplete-grade-request).

Late Assignments

Excuses for an assignment must be made and approved in advance of the due date of the assignment. Requests for excuses must be written, either on paper or email, and approval must be obtained, either by an email reply or by having the paper excuse signed. In order to get credit, with the late assignment you must turn in a copy of the email approval or signed written excuse.

Grade Appeals

ASU has formal and informal channels to appeal a grade. If you wish to appeal any grading decisions, please see http://catalog.asu.edu/appeal.

Absences

- Inform me ahead of time for expected absences and be prepared to make up missed work.
- Information on excused absences related to religious observances/practices that are in accordance with ACD 304–04 "Accommodations for Religious Practices."
- **Information on excused absences related to university sanctioned events activities that are in accord with ACD 304–02 "Missed Classes Due to University-Sanctioned Activities."**

Course Schedule and Assigned Readings

In addition to these readings listed below, I will also periodically assign archaeological case studies applying the methods for additional discussion. This schedule is potentially flexible so that we can spend more time on particular topics as the need/student interest dictates so check Canvas for the up-to-date schedule.

Week 1 (8/25): Overview of the Course; Data and basic data manipulation; Intro to R

- Shennan Chapters 1-2
- Carlson Chapters 1-2
- Cowgill, George L. (2015) Some Things I Hope You will Find Useful Even If Statistics Isn't Your Thing. *Annual Review of Anthropology* 44:1-14.

Week 2 (9/01): Databases and data management

- Shennan Chapters 3-4
- Carlson Chapter 3
- Intro to databases: http://www.ucl.ac.uk/archaeology/cisp/database/manual/node1.html
- Ossa, A., & Simon, A. (2010). Basic Archeological Database Design. https://www.academia.edu/download/33051814/DatabaseManualversion2.pdf
- SQL overview: https://en.wikipedia.org/wiki/SQL_syntax
- Ben Marwick's Tidyverse slides can also be helpful to look at here (https://benmarwick.github.io/tidyverse-for-archaeology/tidyverse-for-archaeology.html#1).

Week 3 (9/08): EDA and Univariate descriptive statistics

- Shennan Chapters 3-4
- Carlson Chapter 3

Week 4 (9/15): Probability and parameter estimation

- Shennan Chapters 5-6
- Carlson Chapters 4-5

Week 5 (9/22): Hypothesis testing and statistical power

- Carlson Chapters 6-7 (skim)
- Carlson Chapter 8 (read carefully)
- Cowgill, G. L. (1977). The Trouble with Significance Tests and What We can do about It. *American Antiquity*, *42*(3), 350–368.

- Greenland, S., S.J. Senn, K.J. Rothman, J.B. Carlin, C. Poole, S.N. Goodman, and D.G. Altman (2016). Statistical tests, *P* values, confidence intervals, and power: a guide to misinterpretations. *European Journal of Epidemiology* 31(4):337-350.

Week 6 (9/29): Bivariate 1: categorical variables

- Shennan Chapter 7
- Carlson Chapter 9 (pages 190-198)

Week 7 (10/06): Bivariate 2: numerical variables

- Shennan Chapter 8-9
- Carlson Chapter 9
- Riel-Salvatore, J., & Barton, C. M. (2004). Late Pleistocene technology, economic behavior, and land-use dynamics in southern Italy. American Antiquity, 69(2), 273–290. https://doi.org/10.2307/4128419

Week 8 (10/13): Bivariate to multivariate: regression and statistical models

- Shennan Chapter 10
- Carlson Chapter 10
- Hutson, S. R. (2002). Gendered Citation Practices in American Antiquity and Other Archaeology Journals. American Antiquity, 67(2), 331–342. https://doi.org/10.2307/2694570
- Alberti, G. (2014). Modeling Group Size and Scalar Stress by Logistic Regression from an Archaeological Perspective. PLOS ONE, 9(3), e91510. https://doi.org/10.1371/journal.pone.0091510

Week 9 (10/20): Multivariate similarity/distance and clustering

- Shennan Chapter 11
- Carlson Chapter 15 (this will introduce some concepts we will cover next week)
- Baxter, Michael J. (2015). Spatial k-means clustering in archaeology - variations on a theme. Unpublished Working Paper
- Froehle, A. W., Kellner, C. M., & Schoeninger, M. J. (2012). Multivariate carbon and nitrogen stable isotope model for the reconstruction of prehistoric human diet. American Journal of Physical Anthropology, 147(3), 352–369. https://doi.org/10.1002/ajpa.21651

Week 10 (10/27): Reducing multivariate dimensionality: principal components analysis

- Shennan Chapter 12
- Carlson Chapters 12 and 14

- Charlin, J., Cardillo, M., & Borrazzo, K. (2014). Spatial patterns in Late Holocene lithic projectile point technology of Tierra del Fuego (southern South America): Assessing size and shape changes. World Archaeology, 46(1), 78–100. https://doi.org/10.1080/00438243.2014.890914
- VanDerwardker, Amber M. (2009) Correspondence analysis and principal components analysis as methods for integrating archaeological plant and animal remains. In *Integrating Zooarchaeology and Paleoethnobotany*, edited by Amber M. VanDerwarker and Tanya M. Peres, pg 75-95. Springer, New York.

Week 11 (11/03): Reducing multivariate dimensionality: CA and PCoA/MDS

- Shennan Chapter 13
- Carlson Chapters 13, 14, and 17
- Peeples, Matthew A., and Gregson Schachner (2012). Refining Correspondence Analysis-Based Ceramic Seriation of Regional Data Sets. *Journal of Archaeological Science* 39(8):2818-2827.
- Mueller, K. (2003). Places and spaces in the Themistou Meris (Fayum / Graeco-Roman Egypt): locating settlements by multidimensional scaling of papyri. *Ancient Society*, 33, 103–125.
- Orchard, T. J., & Clark, T. (2005). Multidimensional Scaling of Northwest Coast Faunal Assemblages: A Case Study from Southern Haida Gwaii, British Columbia. *Canadian Journal of Archaeology / Journal Canadien d'Archéologie*, 29(1), 88–112.

Week 12 (11/10): Supervised classification and prediction: empirical Bayesian and machine learning approaches

- Carlson Chapter 11 (look at supervised classification with discriminant analysis)
- A good discussion on Bayesian vs. Frequentist approaches: https://cxl.com/blog/bayesian-frequentist-ab-testing/
- A good discussion of empirical Bayesian methods: https://m-clark.github.io/posts/2019-06-21-empirical-bayes/
- Klassen, S., Weed, J., & Evans, D. (2018). Semi-supervised machine learning approaches for predicting the chronology of archaeological sites: A case study of temples from medieval Angkor, Cambodia. PLOS ONE, 13(11), e0205649. https://doi.org/10.1371/journal.pone.0205649
- Ortman, S. G., Varien, M. D., & Gripp, T. L. (2007). Empirical Bayesian Methods for Archaeological Survey Data: An Application from the Mesa Verde Region. American Antiquity, 72(2), 241–272. https://doi.org/10.2307/40035813
- Pawlowicz, L. M., & Downum, C. E. (2021). Applications of deep learning to decorated ceramic typology and classification: A case study using Tusayan White Ware from Northeast Arizona. Journal of Archaeological Science, 130, 105375. https://doi.org/10.1016/j.jas.2021.105375

- Yaworsky, P. M., Vernon, K. B., Spangler, J. D., Brewer, S. C., & Codding, B. F. (2020). Advancing predictive modeling in archaeology: An evaluation of regression and machine learning methods on the Grand Staircase-Escalante National Monument. PLOS ONE, 15(10), e0239424. https://doi.org/10.1371/journal.pone.0239424

Week 13 (11/17): Visualization and presentation of results

- Tufte, E. R. (1983). The visual display of quantitative information. Graphics Press.
- Tufte, E. R. (1997a). Visual and statistical thinking: Displays of evidence for making decision.
- Tufte, E. R. (1997b). Visual explanations: Images and quantities, evidence and narrative. Graphics Press.

Week 14 (11/24): Thanksgiving near. No class – prepare final presentations

Week 15 (12/01): Final Presentations

Final papers due: 12/08

OTHER USEFUL RESOURCES

Other Useful Books (not necessarily recommended for purchase)

The books in this section are useful and we will read excerpts of a few of them, but they are often expensive and difficult to find so I am not recommending that you purchase them until you take a look and see if you think they will be useful to you in the long-run. In alphabetical order…

Baxter, Michael J. (2015) *Exploratory Multivariate Analysis in Archaeology*. Percheron Press, New York.

- Useful overview of some of the most frequently used quantitative techniques in archaeology.

Cleveland, William J. (1994) *The Elements of Graphing Data*. Hobart Press, Summit, NJ.

- A classic and useful text on common-sense approaches to data visualization.

Drennan, Robert D. (2010) *Statistics for Archaeologists: A Common Sense Approach*. Plenum Press, New York

- Another useful basic book on statistics in archaeology. Perhaps the most basic text available.
- Carlson's R companion to Drennan: http://people.tamu.edu/~dcarlson/quant/Drennan/StatisticsArchaeologistsR.pdf

James, Gareth, Daniela Witten, Trevor Hastie, and Robert Tibshirani (2014). *An Introduction to Statistical Learning with Applications in R*. Springer, New York.

- This book is an excellent introduction to statistical learning methods that is on the high end of complexity for what I've recommended here. It is freely available here: http://www-bcf.usc.edu/~gareth/ISL/

For an even more in-depth coverage of these topics check out *The Elements of Statistical Learning* (2017) also available for free here: https://web.stanford.edu/~hastie/ElemStatLearn/

Sokal, Robert R. and F. James Rohlf (1994) *Biometry* (third edition or later). Freeman and Co, London.

- This is not a book you read cover to cover but instead a useful reference that answers many important questions about the appropriate use of different statistical techniques for different kinds of data.
- These days much of this info can be found online with a little Googleing, but this is still a useful resource.

Tufte, E. R. (1983). *The visual display of quantitative information*. Cheshire, Conn: Graphics Press.

Tufte, E. R. (1990). *Envisioning Information* (4th ed.). Cheshire, CT: Graphics Press.

- Edward Tufte is one of the best known authorities on how to convey information through visualization, introducing concepts like 'data-ink ratios' and 'chartjunk'. These are a couple of his seminal works. Fun to read and with great visuals of course.

Yau, Nathan (2011) *Visualize This: The FlowingData Guide to Design, Visualization, and Statistics*. Wiley Publishing, New York.

- An excellent text on creating high impact visuals with R.
- The book includes many examples along with R code. I find myself searching this for inspiration often.

R Basics and beyond

There are a number of freely available online resources for using R at a variety of levels. I'm recommending a few below. Take a look and find one that fits your needs and learning style.

Specifically aimed at archaeologists

Baxter, Mike and Hilary Cool (2016) *Basic Statistical Graphics for Archaeology with R: Life Beyond Excel:* https://goo.gl/hXF36c

Baxter, Mike (2015) *Notes on Quantitative Archaeology and R:* https://www.academia.edu/12545743/Notes_on_Quantitative_Archaeology_and_R

Ben Marwick at Washington has also made a great R CRAN view in github focused on archaeological applications of R: https://github.com/benmarwick/ctv-archaeology

Ben also has a nice presentation on using a "Tidyverse" approach to R. Tidyverse is a collection of very helpful packages and a way to carry out tasks in R that I'll use regularly: https://benmarwick.github.io/tidyverse-for-archaeology/tidyverse-for-archaeology.html#1

More general references

Quick-R is a great general reference beginners with R https://www.statmethods.net

The *Cookbook for R* is a rich reference with many examples: http://www.cookbook-r.com

The *R Graph Gallery* shows examples of numerous graphs and other visualizations, and also has all the commands needed to create them (also linked in *Quick-R*). Just copy and paste: https://www.r-graph-gallery.com/index.html

The official *Tidyverse* reference site: https://www.tidyverse.org

Coghlan, Avril (2014) *The Little Book of R for Multivariate Analysis:* http://little-book-of-r-for-multivariate-analysis.readthedocs.io/en/latest/index.html

Huynh, Wendy (2019). The *R for Graduate Students* online book is another good introduction, focusing on using the Tidyverse approach to R: https://bookdown.org/yih_huynh/Guide-to-R-Book/

Paradis, Emmanuel (2005) *R for Beginners* (an older read for getting started): https://cran.r-project.org/doc/contrib/Paradis-rdebuts_en.pdf

Spector, Phil (2008) *Data Manipulation with R* (a book you can download for free)*:* http://link.springer.com.ezproxy1.lib.asu.edu/book/10.1007%2F978-0-387-74731-6

Venables and Smith (2021) *An Introduction to R* (more of a reference manual but useful): https://cran.r-project.org/doc/manuals/r-release/R-intro.pdf

COURSE AND UNIVERSITY POLICIES AND STANDARDS

Student Standards

Students are required to read and act in accordance with university and Arizona Board of Regents policies, including the ABOR Code of Conduct: Arizona Board of Regents Policies 5-301 through 5-308: https://students.asu.edu/srr

Expected classroom behavior

Be sure to arrive on time for class and be respectful of your fellow students in class discussions and interactions.

Policy against threatening behavior

All incidents and allegations of violent or threatening conduct by an ASU student (whether on-or off campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students. If either office determines that the behavior poses or has posed a serious threat to personal safety or to the welfare of the campus, the student will not be permitted to return to campus or reside in any ASU residence hall until an appropriate threat assessment has been completed and, if necessary, conditions for return are imposed. ASU PD, the Office of the Dean of Students, and other appropriate offices will coordinate the assessment in light of the relevant circumstances.

If you have any questions, please refer to ACD-304-10 Course Syllabus or contact the CLAS Dean's Office at (480) 965-6506.

Sexual Harassment and Discrimination

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at https://sexualviolenceprevention.asu.edu/faqs.

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, https://eoss.asu.edu/counseling is available if you wish to discuss any concerns confidentially and privately. ASU online students may access 360 Life Services, https://goto.asuonline.asu.edu/success/online-resources.html.

Academic Integrity

Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see http://provost.asu.edu/academicintegrity.

If you fail to meet the standards of academic integrity in any of the criteria listed on the university policy website, sanctions will be imposed by the instructor, school, and/or dean. Academic dishonesty includes borrowing ideas without proper citation, copying others' work (including information posted on the internet), and failing to turn in your own work for group projects. Please be aware that if you follow an argument closely, even if it is not directly quoted, you must provide a citation to the publication, including the author, date and page number. If you directly quote a source, you must use quotation marks and provide the same sort of citation for each quoted sentence or phrase. You may work with other students on assignments, however, all writing that you turn in must be done independently. If you have any doubt about whether the form of cooperation you contemplate is acceptable, ask the TA or the instructor in advance of turning in an assignment. Please be aware that the work of all students submitted electronically can be scanned using SafeAssignment, which compares them against everything posted on the internet, online article/paper databases, newspapers and magazines, and papers submitted by other students (including yourself if submitted for a previous class).

Note: Turning in an assignment (all or in part) that you completed for a previous class is considered self-plagiarism and falls under these guidelines. Any infractions of self-plagiarism are subject to the same penalties as copying someone else's work without proper citations. Students who have taken this class previously and would like to use the work from previous assignments should contact the instructor for permission to do so.

Prohibition of Commercial Note Taking Services

In accordance with ACD 304-06 Commercial Note Taking Services, written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the note taker's name as well as the instructor's name, the course number, date.

Student Support and Disability Accommodations

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Disability Resource Center (DRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities.

Qualified students with disabilities may be eligible to receive academic support services and accommodations. Eligibility is based on qualifying disability documentation and assessment of individual need. Students who believe they have a current and essential need for disability accommodations are responsible for requesting accommodations and providing qualifying documentation to the DRC. Every effort is made to provide reasonable accommodations for qualified students with disabilities.

Qualified students who wish to request an accommodation for a disability should contact their campus DRC at: http://www.asu.edu/studentaffairs/ed/drc/. If you are a student in need of special arrangements for we will do all we can to help, based on the recommendations of these services. For the sake of equity for all students, we cannot make any accommodations without formal guidance from these services.

Drop and Add Dates/Withdrawals

Please refer to the academic calendar on the deadlines to drop/withdraw from this course. Consult with your advisor and notify your instructor if you are going to drop/withdraw this course. If you are considering a withdrawal, review the following ASU policies: Withdrawal from Classes, Medical/Compassionate Withdrawal, and Drop/Add and Withdraw.

Email Communications

All email communication for this class will be done through your ASU email account. Your email communications should be professional and succinct. You should be in the habit of checking your ASU email regularly as you will not only receive important information about your class(es), but other important university updates and information. You are solely responsible for reading and responding if necessary to any information communicated via email. For help with your email contact the help desk. Your email communications should be professional and succinct. General guidelines for email include:

- Expect faculty to respond to emails between 9am and 5pm on Monday through Friday with a forty-eight hour lag time.
- For any concerns about grades, meet with your professor or TA face-to-face.
- Before sending questions via email, make sure that your question is not answered on the course syllabus or website.
- Be specific about the subject of the email in the mail subject heading and use proper salutation (e.g. Dear Professor XXXX) and check spelling, grammar, and punctuation.

Campus Resources

As an ASU student you have access to many resources on campus. This includes tutoring, academic success coaching, counseling services, financial aid, disability resources, career and internship help and many opportunities to get involved in student clubs and organizations.

- Tutoring: http://studentsuccess.asu.edu/frontpage
- Counseling Services: http://students.asu.edu/counseling
- Financial Aid: http://students.asu.edu/financialaid
- Disability Resource Center: http://www.asu.edu/studentaffairs/ed/drc/
- Major/Career Exploration: http://uc.asu.edu/majorexploration/assessment
- Career Services: http://students.asu.edu/career
- Student Organizations: http://www.asu.edu/studentaffairs/mu/clubs/

For more information about the School of Human Evolution and Social Change, including our degree programs, research opportunities and advising information, please go to: http://shesc.asu.edu/undergraduate/undergraduate-studies. Our advisors are always willing to discuss career and guidance options with you.

Note: this syllabus is not a contract. It is subject to further change or revision, to best realize the educational goals of the course. Revisions will be announced in class or in course materials online with appropriate prior notice.