Exploring Anthropological Data

TIME: M periods 4-6

PLACE: TUR B304

INSTRUCTOR: David Daegling, B376 Turlington Hall   (352) 294-7603
                         daegling@ufl.edu
                         Office Hours: Mondays 2:00 – 4:00 PM; Wednesdays 9:00 – 10:30 AM.

COURSE DESCRIPTION: This course provides a foundation in resampling methods, a set of intuitive, flexible and general approaches to statistical analysis for all types of anthropological data. This course is ideally suited for those interested in a practical, "learn by doing" approach to data analysis and presentation.

COURSE OBJECTIVES: This course provides a practical, problem-based approach to data analysis in the field of biological, archaeological and cultural anthropology. Primary objectives include learning skills for informed application of resampling approaches to statistical inference and for effective communication of quantitative data. Statistical concepts and theory are developed through numerical simulations to provide a problem-driven approach to probabilistic thinking.

COURSE MATERIALS: We will be using the open-source platform **R** throughout the course. This platform is free to download and use. Weekly readings are from three texts available as e-books through UF libraries: Recommended readings from Dalgaard (2008) *Introductory Statistics with R*, Zuur et al.(2009) *A Beginner's Guide to R*, and Bivand et al. (2008) *Applied Spatial Data Analysis with R*. In addition, we will review papers in the primary literature as exemplars of statistical application (or misapplication) for some topics; these are accessed via the Canvas course pages.

STUDENT LEARNING OUTCOMES: Successful completion of the course will provide students with the following skills:

- Competence in the operation of **R**
- Resampling statistical applications
- Graphic presentation of quantitative data
- Parametric and nonparametric statistical applications
- Hypothesis specification
- Simulation of cultural and evolutionary processes
- Diagnosis of validity of statistical inferences

COURSE REQUIREMENTS: Grading criteria for the course include timely and correct completion of homework assignments (70%), in-class quizzes (10%), attendance and participation (10%) and a take-home final exam (10%). For some problems and the final exam you will be given unique datasets to analyze and interpret. Final grades are determined as follows:

A	100%-92%	A-	91.9%-88%	B+	87.9%-84%
B	83.9%-80%	B-	79.9%-76%	C+	75.9%-72%
C	71.9%-68%	C-	67.9%-64%	D+	63.9%-60%
D	59.9%-56%	D-	55.9%-52%	F(E)	51.9%-0%

You will be able to track your current grade in the course on Canvas throughout the semester. Information on UF grading policies can be found at https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

OTHER POLICIES:

Late Assignments

Due dates are provided on Canvas. Late submissions are only eligible for a maximum of half credit unless prior arrangement with the instructor has been made. Any assignment submitted after solutions have been distributed will receive zero credit. Please note that solutions may distributed anytime between one day and one week after an assignment due date.

Electronic Devices

Smart phones must be off or silenced during class. Please refrain from using laptops for any purpose other than course work during class meetings.

Online Materials and Communication

You are responsible for all materials posted on E-Learning (Canvas) at https://elearning.ufl.edu/, including required readings, announcements, assignment instructions, other supplementary material, or any communication transmitted through the mail function in Canvas. Canvas technical support is available at https://elearning.ufl.edu/e-learning-basics/uf-e-learning-faqs/.

Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should contact the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester. Student accommodation requests should be communicated to the instructor before the end of the first month of the term.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited, including publishing of recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Course Evaluations – GatorEvals

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Student Conduct and Academic Honesty and Integrity

Cheating, copying other's work, plagiarism, and other acts of academic misconduct are unethical. UF and the course instructor consider these to be serious offenses.

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/students/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

AI is a resource for R coding that comes with risk. In this course, pasting blocks of code generated by AI

platforms into assignment scripts is considered a form of plagiarism and academic misconduct. Use of AI for improving upon or debugging small portions of an original script is considered acceptable use, provided the nature and scope of use is disclosed in an annotation within the script. Students assume all responsibility for the accuracy and validity of any recommendations garnered from AI resources. Heed all warnings that AI resources are prone to mistakes.

Harassment and Discrimination

"Harassment" is defined as conduct that (1) is of any type (written, oral, graphic, or physical), (2) is directed towards or against a person because of their personal status (i.e., race, religion, sex, sexual orientation, political affiliation, national origin, age, disability, marital status, pregnancy or others), and that (3) unreasonably interferes with the individual's work, education, or participation in activities or programs at UF or creates a working or learning environment that a reasonable person would find threatening. "Discrimination" is defined as a conduct that (1) adversely affects any aspect of an individual's employment, education, or participation in activities or programs at UF, and (2) is based on one or more personal characteristics listed above. Any student who feels that his/her rights have been violated may speak to the instructor who will direct the complaint through the proper university channels, or the student may directly file a complaint with UF Department of Human Resources.

Campus Resources

Students experiencing personal problems that are interfering with their academic performance are encouraged to contact Student Affairs, DRC, and/or the Counseling and Wellness Center
- 	UF Student Affairs: https://ufsa.ufl.edu/ or https://care.dso.ufl.edu/
- 	Disability Resource Center (DRC): https://disability.ufl.edu/
- 	Counseling and Wellness Center: https://counseling.ufl.edu/, 392-1575
- 	Health and Wellness U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or (352) 392-1575 for help.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learningsupport@ufl.edu. Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Anthropology's Library Page:
    https://guides.uflib.ufl.edu/anthroUF/undergrad
    Ginessa Mahar (anthropology Librarian): gjmahar@ufl.edu, office: Library West rm.500

COURSE ADMINISTRATION: Syllabi, assignments, datasets, resources, and readings will be distributed through the Canvas platform in e-learning: http://lss.at.ufl.edu/ .

COURSE SCHEDULE: (after Week 1 portions of class time will be devoted to review of problem sets and troubleshooting coding issues, as well as exploration of topics introduced in course readings)

Week		Topic	Reading
1	(8/26)	Navigating the R platform	Dalgaard Chapter 1; Zuur Chapters 2, 3
2	(9/9)	Chance and probability	Dalgaard Chapter 3; Cheng & Pitt 2003
3	(9/16)	Resampling philosophy	Lee 2001; Zuur Chapter 6
4	(9/23)	Structure of ANOVA	Dalgaard Chapters 5, 7 (through 7.2)
5	(9/30)	Regression & correlation	Rodgers & Nicewander 1988 Dalgaard Chapter 6; Foley 1991
6	(10/7)	Comparing covariance data	Dalgaard Chapter 12 (12.7), Grant et al 1992
7	(10/14)	Factorial and nested data	Dalgaard Chapters 7 (through 7.6), 12 (12.6) Conover and Iman 1981
8	(10/21)	Multivariate stuff (GLM, PCA, DFA)	Dalgaard Chapters 11, 13, Corruccini 1975 Dunbar & Schultz 2007, Fleagle & Reed 1996
9	(10/28)	Analysis of frequencies	Dalgaard Chapters 8, 13
10	(11/4)	Autocorrelation Circular distributions	Bivand Chapter 9 Griffin & Richmond 2009
11	(11/18)	Simulating processes	Potts 1996, Grove 2011
12	(12/2)	Bayesian inference Statistical risk management	Gowland and Chamberlain 2002 Taleb 2007