Quantitative Research in Anthropology
ANG 5486-001
Fall 2020
Credit Hours: 3.0
Room: PSY 107 (Psychology Building)
Time: Fridays 1:00-3:50pm
Mode: Face-to-Face Instruction (P)

Instructor: Donovan M. Adams, Ph.D.
Office Hours: Tuesday and Wednesday, 11:00am-12:30pm through Zoom; or by appointment
E-mail: donovan.adams@ucf.edu

Required Texts:
- *Quantitative Methods in Archaeology Using R*. David L. Carlson. ISBN: 978-1-107-65557-7.
- *R Cookbook: Proven Recipes for Data Analysis, Statistics, and Graphics*. J. D. Long and Paul Teetor. ISBN: 9788-1-492-04068-2.
- Additional readings will be provided through Webcourses@UCF.

Required Technology (This class, by nature of using the R statistical interface does require access to a computer):
- R (https://cran.r-project.org).
- R Studio (https://rstudio.com/products/rstudio/download/).
- Zoom (must be accessed using your Knights e-mail).

Course Description:
Quantitative approaches to problems in anthropology, including multivariate systems, assessment of reliability, and approaches for small samples.

Course Objectives:
Students will:
1. Learn how to use the R statistical software for calculating univariate statistics and begin building skills at writing functions for statistical application.
2. Learn basic statistical principles.
3. Learn univariate statistical techniques for sample summaries, analysis, and data treatment.
4. Critically examine methodology, interpretations, and presentation of anthropological research.
5. Carry out and present quantitative projects.

Grading:
Grades will be posted to Webcourses@UCF based on the following:
1. Homework Assignments: There are 10 assignments throughout the semester, each worth 25 points. These will allow you to practice the material learned in lecture. These will be online and require use of R to answer the questions. You will provide both the answers

obtained and the code used to obtain it. These assignments must be completed using R Markdown. Each assignment is due by the beginning of class (1:00 pm) and must be submitted on Webcourses@UCF.

2. End-of-Semester Project: This will consist of three primary components: data analysis (100 points), a research presentation (100 points), and a write-up (100 points). You may use either 1) your own data, 2) a dataset provided to you by a faculty member (great opportunity to get involved on research projects; however, the faculty member MUST know and have provided permission for data to be used as a part of this class), or 3) an open source dataset. You must have a selected dataset by September 11th (10 points) and a chosen research question and hypotheses by October 2nd (10 points). Using the techniques learned in class, you must carry out a research project, consisting of preparing data for analysis, conducting statistical treatments, and carrying out interpretations. The 15-minute presentation will be conducted as if you are at a conference. Additionally, you must submit a write-up formatted as if submitting a journal article (i.e., an abstract, introduction, materials and methods, results, discussion and conclusions, and references). More detailed instructions for this assignment will be given in class and provided on Webcourses@UCF, along with grading rubrics for each component of the assignment.
3. Participation: Participation means asking and answering questions, engaging with the provided R code and in-class hands-on learning (therefore, you must either bring your own laptop or use campus resources) and discussing assigned readings over the course the semester.
    a. It is important that you are able to critically evaluate published research. This involves a number of factors: sample construction; statistical methods; correct application of methods; correct/appropriate interpretations of results; and clear presentation of goal, method, and results/interpretations (e.g., clear language, tables and figures, etc.). Be prepared to at least be able to discuss these things in class.

A: 92.5-100	B-: 80-82.4	D+: 67.5-69.9
A-: 90-92.4	C+ 77.5-77.9	D: 62.5-67.4
B+: 87.5-89.9	C: 72.5-77.4	D-: 60-62.4
B: 82.5-87.4	C-: 70-72.4	F:0-59.9

Points:

Assignments: 10 x 20 points each = 200 points
Dataset Selected: 10 points
Project Topic Selected: 10 points
End-of-Semester Project = 300 points (100 for data analysis, 100 for presentation, 100 for write-up)
Participation: 140 points

Total: 660 points

Financial Aid Requirement:

Federal regulations require that federal aid awards be based on courses in which students demonstrate academic engagement.

All students must complete the "Beginning Evaluation" assignment on Webcourses@UCF by the end of the day on Friday, August 28th (11:59 pm). This will be used to assess your academic engagement as compliant to federal regulations.

Class Policies:

1. We will be working in a computer lab with campus provided computers. If you would rather use your own laptop, that is okay; however, I expect appropriate class use of your own technology. The same appropriate use of technology is expected on campus computers (e.g., no online shopping, no social media, etc.). These resources are to be used for the purposes of completing course material. (Furthermore, it's always a good idea to bring a notebook for notes and to sketch out thoughts – finding all those statistical symbols while typing takes too much time and risks losing valuable information).
2. While we are discussing methodology, interpretations, ethics, etc. there may be cases of disagreement. I encourage debate; however, it is expected that no derogatory, disrespectful or insulting, or accusatory language will be used. Professionals should be able to talk without resorting to insults. Be respectful of yourselves, each other, and to individuals outside the class.
3. All communication will be done either through Webcourses or directly to your UCF e-mail address. Be sure to have these on file and that you are checking these.
4. As office hours and eventually class will take place through Zoom, I understand that the possibility of working from home may mean children and pets make an appearance from time to time. If you need to leave at any point to help take care of a situation, that is fine. Simply mute and stop the video until you are able to rejoin.

University-Wide Face Covering Policy for Common Spaces and Face-to-Face Classes:
To protect members of our community, everyone is required to wear a facial covering inside all common spaces including classrooms (https://policies.ucf.edu/documents/PolicyEmergencyCOVIDReturnPolicy.pdf. Students who choose not to wear facial coverings will be asked to leave the classroom by the instructor. If they refuse to leave the classroom or put on a facial covering, they may be considered disruptive (please see the Golden Rule for student behavior expectations). Faculty have the right to cancel class if the safety and well-being of class members are in jeopardy. Students will be responsible for the material that would have been covered in class as provided by the instructor.

Notifications in Case of Changes to Course Modality:
Depending on the course of the pandemic during the semester, the university may make changes to the way classes are offered. If that happens, please look for announcements or messages in Webcourses@UCF or Knights email about changes specific to this course.

Should this course shift to remote-only instruction, the university has provided several resources to assist students with learning: https://digitallearning.ucf.edu/newsroom/keeplearning/. If this change occurs, the course will include synchronous ("real time") sessions that will also be available as a recorded session for later review in Webcourses@UCF. Students are expected to

review these available sessions. Such recordings/streaming will only be available to students registered for this class. These recordings are the intellectual property of the faculty and they may not be shared or reproduced without the explicit, written consent of the faculty member. Further, students may not share these sessions with those not in the class or upload them to any other online environment. Doing so would be a breach of the Code of Student Conduct, and, in some cases, a violation of the Federal Education Rights and Privacy Act (FERPA). This also applies to any in course materials and lectures.

COVID-19 and Illness Notification:
Students who believe they may have a COVID-19 diagnosis should contact UCF Student Health Services (407-823-2509) so proper contact tracing procedures can take place.
Students should not come to campus if they are ill, are experiencing any symptoms of COVID-19, have tested positive for COVID, or if anyone living in their residence has tested positive or is sick with COVID-19 symptoms. CDC guidance for COVID-19 symptoms is located here: (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html)
Students should contact their instructor(s) as soon as possible if they miss class for any illness reason to discuss reasonable adjustments that might need to be made. When possible, students should contact their instructor(s) before missing class.

In Case of Faculty Illness:
If the instructor falls ill during the semester, there may be changes to this course, including having a backup instructor take over the course. Please look for announcements or mail in Webcourses@UCF or Knights email for any alterations to this course.

Zoom:
Please take time to familiarize yourself with Zoom by visiting the UCF Zoom Guides (https://cdl.ucf.edu/support/webcourses/zoom/). You may choose to use Zoom on your computer, laptop, or mobile device (phone or tablet). Using this program will require a microphone and a webcam and adequate Internet bandwidth.

Things to know about Zoom:

- You must sign into my Zoom session using your UCF NID and password.
- The Zoom sessions are recorded so that they may be posted on to WebCampus following the class period.
- Improper classroom behavior is not tolerated within Zoom sessions and may result in a referral to the Office of Student Conduct.
- You can contact Webcourses@UCF Support (https://cdl.ucf.edu/support/webcourses/) if you have any technical issues accessing Zoom.
- Please be on mute when not talking and use headphones to minimize the interference of background noise.

Academic Integrity:
Students should familiarize themselves with UCF's Rules of Conduct at <http://osc.sdes.ucf.edu/process/roc>. According to Section 1, "Academic Misconduct," students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.
2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.
3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
4. Falsifying or misrepresenting the student's own academic work.
5. Plagiarism: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
7. Helping another violate academic behavior standards.
8. Soliciting assistance with academic coursework and/or degree requirements.

Responses to Academic Dishonesty, Plagiarism, or Cheating
Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, *The Golden Rule*<http://goldenrule.sdes.ucf.edu/docs/goldenrule.pdf>. UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies, and instructions within this course can range from a zero on the exercise to an "F" letter grade in the course. In addition, an Academic Misconduct report could be filed with the Office of Student Conduct, which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a "Z" designation on one's transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Let's avoid all of this by demonstrating values of honesty, trust, and integrity. No grade is worth compromising your integrity and moving your moral compass. Stay true to doing the right thing: take the zero, not a shortcut.

Course Accessibility:
The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need access to course content due to course design limitations should contact the professor as soon as possible. Students should also connect

with Student Accessibility Services (SAS) <http://sas.sdes.ucf.edu/> (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). For students connected with SAS, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential course access and accommodations that might be necessary and reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student. Further conversation with SAS, faculty and the student may be warranted to ensure an accessible course experience.

Course Accessibility and Disability COVID-19 Supplemental Statement:
Accommodations may need to be added or adjusted should this course shift from an on-campus to a remote format. Students with disabilities should speak with their instructor and should contact sas@ucf.edu to discuss specific accommodations for this or other courses.

Campus Safety:
Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. Students should be aware of their surroundings and familiar with some basic safety and security concepts.

- In case of an emergency, dial 911 for assistance.
- Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Students should make a note of the guide's physical location and review the online version at <http://emergency.ucf.edu/emergency_guide.html>.
- Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency.
- If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see <http://www.ehs.ucf.edu/AEDlocations-UCF> (click on link from menu on left).
- To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to <https://my.ucf.edu> and logging in. Click on "Student Self Service" located on the left side of the screen in the toolbar, scroll down to the blue "Personal Information" heading on the Student Center screen, click on "UCF Alert", fill out the information, including e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."
- Students with special needs related to emergency situations should speak with their instructors outside of class.
- To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video (<https://youtu.be/NIKYajEx4pk>).

Deployed Active Duty Military Students:
Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

Make-Up Assignments for Authorized University Events or Co-curricular Activities:

Students who represent the university in an authorized event or activity (for example, student-athletes) and who are unable to meet a course deadline due to a conflict with that event must provide the instructor with documentation in advance to arrange a make-up. No penalty will be applied. For more information, see the UCF policy at <https://policies.ucf.edu/documents/4-401.pdf>

Religious Observances:
Students must notify their instructor in advance if they intend to miss class for a religious observance. For more information, see the UCF policy at <http://regulations.ucf.edu/chapter5/documents/5.020ReligiousObservancesFINALJan19.pdf>.

Diversity and Inclusion:
The University of Central Florida considers the diversity of its students, faculty, and staff to be a strength and critical to its educational mission. UCF expects every member of the university community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events. Dimensions of diversity can include sex, race, age, national origin, ethnicity, gender identity and expression, intellectual and physical ability, sexual orientation, income, faith and non-faith perspectives, socio-economic class, political ideology, education, primary language, family status, military experience, cognitive style, and communication style. The individual intersection of these experiences and characteristics must be valued in our community.

Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at www.shield.ucf.edu and http://cares.sdes.ucf.edu/.

If there are aspects of the design, instruction, and/or experiences within this course that result in barriers to your inclusion or accurate assessment of achievement, please notify the instructor as soon as possible and/or contact Student Accessibility Services.

For more information on diversity and inclusion, Title IX, accessibility, or UCF's complaint processes contact:

- Title IX – OIE – http://oie.ucf.edu/ & askanadvocate@ucf.edu
- Disability Accommodation – Student Accessibility Services – http://sas.sdes.ucf.edu/ & sas@ucf.edu
- Diversity and Inclusion Training and Events – www.diversity.ucf.edu
- Student Bias Grievances – Just Knights response team – http://jkrt.sdes.ucf.edu/
- UCF Compliance and Ethics Office – http://compliance.ucf.edu/ & complianceandethics@ucf.edu
- Ombuds Office – http://www.ombuds.ucf.edu

Course Schedule (Dates and readings may change as needed. Any changes will be announced to students in class and through e-mail).

Week	Date	Topic	Readings			Assignment
			C*	L&T**	Articles	
1	Aug 28	Introduction to course and R		1-3		
2	Sep 4	R code; Working in R	2, 3.1	2-3		
3	Sep 11	More R code and data management	4, 5.1	4-5, 16		**Dataset Due**
4	Sep 18	Introduction to statistics and research design	Intro		Aldenderfer (1998) Agbe-Davies (2009) Smith (2019)	**Assignment #1**
5	Sep 25	Ethical considerations			Turner and Mulligan (2019) ASA (2018) Juutilainen et al. (2020)	**Assignment #2**
6	Oct 2	Descriptive statistics	3.3-3.4	9.1-9.3, 9.5	Franklin (2020) Panich et al. (2018) Smith and Boaks (2014)	**Project Topic Due**
7	Oct 9	Normality; Transformations	3.2, 6	9.7, 9.13	Sousa et al. (2020) Thompson (2013)	**Assignment #3**
8	Oct 16	Tests for statistical significance; Hypothesis testing	8.2-8.4	9, 9.8-9.12, 9.15, 9.18-9.19	Smith (2018) de la Cova (2010) Stojanowski et al. (2007)	**Assignment #4**
9	Oct 23	Correlations; Error testing	9.1-9.2	9.4, 9.17	Reitsema et al. (2016) Pilloud et al. (2020) Peregrine (2019)	**Assignment #5**
10	Oct 30	Basic Figures and Tables	5.2-5.7	10	Miracle (2005) Mihailidis et al. (2013) http://www.jedidiahcarlson.com/post/need-pca/ Nugent (2020)	**Assignment #6**

11	Nov 6	ANOVA	8.5	11.21-11.25	Rautman and Edgar (2020) Tallman (2019) Algee-Hewitt (2017)	**Assignment #7**
12	Nov 13	Missing data; Imputation	7		Kenyhercz and Passalacqua (2016) Kenyhercz et al. (2019) Berthaume et al. (2018) Rathmann et al. (2019)	**Assignment #8**
13	Nov 20	Regression	9.3	11-11.20	Lasisi et al. (2016) Palma et al. (2011) Dominguez and Agnew (2016)	**Assignment #9**
14	Nov 27	THANKSGIVING BREAK – NO CLASS				
15	Dec 4	Presentations				**Assignment #10**
16	Dec 11	FINAL EXAM DAY				**Write-ups due**

Assignments are listed on the day in which they are due (at 1:00 pm) (Ex: Assignment #1 is due at 1:00 pm on Sept 18th).
***C:** *Quantitative Methods in Archaeology Using R*
****L&T:** *R Cookbook*

Important Dates (Also check https://calendar.ucf.edu/2020/fall for any other important dates):
Sep 11: Datasets Due
Oct 2: Project Topic Due
Nov 27: Thanksgiving Break - No Class
Dec 4: Presentations
Dec 11: Final Exam Day – Submit write-ups