Morphometrics (ANG6930)
Syllabus – Spring 2015

Lectures: **Wednesday 10:40am-1:40pm (4-6 period) – TUR1208H**

Instructor: **Dr. Valerie Burke DeLeon**
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University of Florida
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Office hours: Turlington B374; Wednesdays 2-4pm and by appointment

Course Description:

This is an applied workshop course in *Morphometrics*, the statistical analysis of shape. Each three-hour class will include a lecture on theory, a demonstration of methods used, and "workshop" time for independent progress on class assignments. Readings will be assigned from the text or posted to the website for each week. Grades are based on timely submission of weekly assignments (75%) and the submission and presentation of a final project (25%).

Course Objectives:

1) Learn to think critically about the quantification and analysis of shape.
2) Gain practical experience in collecting precise and repeatable landmark coordinate data.
3) Become familiar with commonly used morphometric software packages and their appropriate use.

Course Materials:

Text:
Zelditch M, *Geometric Morphometrics for Biologists*

Software programs:
Excel
MorphoJ
Morpheus
WinEDMA
Geomorph for R

Website:
Canvas (ufl.instructure.com)

Communication: Email is the best way to reach Dr. DeLeon (vdeleon@ufl.edu). Please use "Morphometrics" in the subject line.

Final Project: You will use methods learned in this course to design and implement a research project that includes the statistical analysis of *shape*. You may have overlap between this project and other program requirements (e.g., course projects). The final project should be written in manuscript form and include the following:

Title page
Introduction (statement of hypothesis with relevant, ***brief*** literature review) ~ 1 page
Materials and Methods (emphasis is on this section; be explicit) ~ 2 pages
Results (include tables, figures, and statements of statistical significance) ~ 2 pages
Conclusions (inferences based on the results and possible future directions) ~ 1 page
References

Each student will also prepare and present a 12-minute Powerpoint presentation to the class. Equal time should be allocated to describing 1) data collection and analytic methods, 2) results and interpretation, and 3) advice, tips, and suggestions for your classmates. Presentations are intended to be fun and informative, so please talk to Dr. DeLeon in advance if you have any concerns about this requirement.

Attendance: Our learning environment depends heavily on discussion, and each student has a responsibility to attend and contribute to the class.

Course Evaluations: This is the first presentation of this course in this format, and your opinions on what works and doesn't work are of great value. You are encouraged to share your opinions at any time with Dr. DeLeon in person or by email. In addition, students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.

Course Schedule:

Jan	7	Shape
	14	Geometric Morphometrics: Procrustes Superimposition
	21	Geometric Morphometrics: Shape Space and TPS
	28	Principal Components Analysis
Feb	4	Canonical Variates and Discriminant Function Analyses
	11	Euclidean Distance Matrix Analysis: Form
	18	Euclidean Distance Matrix Analysis: Shape and PCOORD
	25	Measurement Error
Mar	4	SPRING BREAK
	11	Outlines, Surfaces, and Semilandmarks
	18	Fourier Elliptical and Eigenshape Analyses
	25	NO CLASS (AAPA Meetings)
Apr	1	NO CLASS (EB Meetings)
	8	Topic TBD
	15	Dedicated Workshop Time
	22	Presentation of Final Projects