



VISUAL METHODS FOR STUDYING MORPHOLOGY AND EVOLUTION

COURSE DESCRIPTION:

This class will cover a series of visual methods and techniques to facilitate the study evolution. We will be covering several topics starting with basic visual programs (Adobe CS), Computer tomographies, geometric morphometrics and statistic packages. The course is very hands on, and we will be developing 4 modules.

CREDIT HOURS: 3

COURSE OBJECTIVES:

Module 1: Introduction the visual programs, Photoshop, Adobe Illustrator, Adobe profesional. Goal, design and produce a poster suitable for a Scientific meeting.

Module 2: CT tomographies. Learn basic of imaging processing. Link your data to morphosource and other online platforms. The whole class will work on an anatomical paper.

Module 3: R package and geomorph. We will learn basics of R to produce scientific graphs. Learn the basics of morphometric analyses. TNT module for 2D and 3D data.

Module 4: This module is optional depending on the time available, but minimally we will review recent methods to study and visualize evolution, and for comparative biology (e.g. phytools).

PROFESSOR:

Juan Diego Daza Ph. D.

Lee Drain Building 100B

Phone: 936-294-4250

Email: daza@shsu.edu

Office Hours: Tuesday and Thursday 10:00-11:00 AM or by appointment.

ROOM & TIME: Lecture: Tuesday 9:00 AM to 10:50 AM, LDB 125

OPTIONAL BOOKS AND OTHER SOURCES:

BECKERMAN AP, PETCHEY OL. 2012. Getting started with R: An introduction for Biologists. Oxford University Press. 113 pp.

GRADE EXPLAINED:

Each module will contribute equally to the final grade (250 points if 4 modules are covered, and 333.33 if 3 modules are covered).

Remarks: There will be absolutely no extra opportunities during the semester. If you know in advance that you will miss an activity, you need to make some prior arrangements. Also if your class conflict with a religious event or because you are conducting official Sam Houston State University business, you may make arrangements to prior to the event.

GRADE EXPLAINED:

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Course grades will be assigned on a 1000-point scale. See the breakdown below for the number of points required for each letter grade. Should an error be made in scoring the modules, please contact me as soon as possible.

POINTS REQUIRED:

Grade

A	900-1000
B	800-899
C	700-799
D	600-699
F	599 and below

USE OF ELECTRONIC DEVICES:

I welcome the use of personal computers for class purposes (i.e. note taking, online academic resources); however we expect that students who bring electronic devices to class will use them for academic purposes only. The use of electronic devices for non-academic activities during classroom activities, such as surfing the Internet, updating social networking pages, or engaging in any other extracurricular activities, is disruptive to fellow students and disrespectful to faculty, and therefore constitute unprofessional behavior. The use of mobile phones is not allowed and they have to be in silent mode prior to the beginning of the class. If someone receives a call during a lecture, I might be willing to leave.

ACADEMIC DISHONESTY:

Dishonesty will not be tolerated in this course. This includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Students who are found to be dishonest will receive academic sanctions, such as an "F" grade on the exam. They will also be reported to the Head of the Department of Biological Sciences for possible further disciplinary action.

VISITORS IN THE CLASSROOM:

Unannounced visitors must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is my discretion whether or not the visitor will be allowed in the classroom.

AMERICANS WITH DISABILITIES ACT:

It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the benefits of, or be subject to discrimination under any academic or Student Life program of activity. Students with disabilities may request assistance with academically related problems stemming from individual disabilities by contacting the Director of Counseling Center in the Lee Drain Annex or by calling (936) 264-1720. Students who have disabilities that may prevent them from fully demonstrating their abilities should contact the instructor as soon as possible to discuss accommodations necessary to

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ensure the students educational opportunity. All disclosures of disabilities will be kept strictly confidential. NOTE: no accommodation can be made until you register with the Counseling Center.

RELIGIOUS HOLIDAYS:

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). This request must be made in the first fifteen days of the semester or the first seven days of a summer session in which the absence(s) will occur. The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed.

CLASS ATTENDANCE

1. Regular and punctual class attendance is expected of each student at Sam Houston State University.
2. Each faculty member will keep a record of student attendance.
3. Each faculty member will announce the policies for accepting late work or providing makeup examinations. Students are expected to show appropriate cause for missing or delaying major assignments or examinations.
4. A student shall not be penalized for three or fewer hours of absences when examinations or other assigned class work has not been missed; however, at the discretion of the instructor, a student may be penalized for more than three hours of absences.
5. Each instructor is obligated to clarify in writing to each student enrolled in class at the beginning of the semester or summer session the instructor's classroom policy regarding absences.
6. Class absences will be recorded and counted only from the actual day of enrollment for the individual student in that specific class.

See more information on: <http://www.shsu.edu/catalog/scholasticrequirements.html>