Applied Quantitative Methods (EVSS 695 / BIOL 453)

Dan McGlinn

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College of Charleston, Department of Biology, Spring 2015

Course and Instructor info:

- Meeting time: 6:30-9:30 pm W; HWWE 307
- Instructor: Dr. Dan McGlinn
- Email: mcglinndj@cofc.edu
- Office: HWWE 203
- Phone: 843-953-0190
- Office hours: 11:30 - 12:30 p.m M or email by an appointment

Course Description:

This course is a three hour seminar for graduate and advanced undergraduate students. The goals of the course are to expose students to more advanced and applied topics in statistical analyses, as well as, provide students the opportunity to apply these methods to their own projects.

Course Structure:

The course will be roughly divided in half between time spend learning about tools and time spend developing one's own project.

Course Objectives:

1. To develop knowledge and exposure to modern quantitative methods such as (but not limited to):
    - R programming
    - Version control
    - Database SQL
    - GIS tools
    - Spatial statistics
    - Multivariate Statistics
2. To develop a project using some combination or these tools to addresses a scientific question.
3. To improve oral presentation and peer-teaching skills

Student Evaluation:

Graduate Students will be evaluated based on the following criteria: * 5% Participation * 5% Peer Teaching * 45% Assignments * 45% Project - 15% oral presentation - 15% project code - 15% written description of analysis (e.g., Methods and Results section of a paper)

Undergraduate Students will be evaluated based on the following criteria: * 5% Participation * 45% Assignments * 50% Project - 25% oral presentation - 25% project code

Project - The project in this course may span a wide range of potential topics to be discussed as the course progresses.

Prerequisites:

Introductory statistics is required. Programming experience is not required but an interest in learning how to program is required.

Course Schedule:

- Week 1 - Introduction to R
- Week 2 -

Course Policies:

Class time - Our time in class will be used primarily for 1) learning new quantitative methods, 2) working on exercises, 3) presenting to the rest of the class, and 4) developing student projects.

Students with Disabilities and Special Needs - The College will make reasonable accommodations for persons with documented disabilities. If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact the Center for Disability Services (CDS/SNAP program) located in the Lightsey Center, Suite 104, 953-1431, SNAP@cofc.edu. If you have a documented disability and need accommodations, please come talk with me and bring your Professor Notification Letter (PNL) as soon as possible. SNAP students are requested to make arrangements with the instructors well in advance of exams.

Academic integrity – Academic integrity is essential at the College of Charleston and to the practice of science. You will therefore be held to a high standard of integrity in this course. Plagiarism, lying, cheating or attempted cheating are violations of the College's honor code. Any honor code violations that occur will be handled as outlined in the student handbook. Please be absolutely sure that you understand what the honor code requires of you (see pages 10-12 of the student handbook, http://cofc.edu/generaldocuments/handbook.pdf). If you have any questions or concerns about honor code expectations or about how to avoid violations, please consult with the instructor.

Plagiarism - Plagiarism is any use of words or ideas produced by another person without proper attribution, and includes failing to paraphrase adequately or to cite sources properly. Plagiarism, both intentional and unintentional, is forbidden by the honor code. Please consult the instructor if you have any questions or concerns about how to use and cite sources to avoid plagiarism.

Collaboration - Many of your assigments will involve working with other students. Nevertheless, the work you submit must be completed independently and must represent your own independent ideas, unless the instructor specifically requires a joint product. Please be sure that you understand the distinction between collaborating and copying; ask your instructor if you have any doubts. Suspicions of unauthorized collaboration will be dealt with according to the honor code.

Re-using work - Please be aware that using work that you or anyone else has done for this or any other class or project, either in whole or in part, is a violation of the honor code, even if the work is revised. Biology 211 instructors keep copies of assignments submitted by students in previous semesters, and reuse or revision of such will result in reporting to the Dean of Students.