WILD 595 –Section 1

Research Design Lab – 1 credit

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Computer lab: TBD
Co-requisite: WILD 540 – Research Design, Dr. Lisa Eby (required)

Course objectives: To introduce wildlife biology students to the R statistical analysis environment to complement and enhance learning objectives of WILD 540 – Research Design. Specifically, students will be expected to learn R programming skills, R data management and R graphing functions as well an introduction to statistical analysis in R. These will be designed to expose students to elements of Research Design taught in lectures including basic probability theory, basic frequentist statistical approaches, sampling design, statistical power, maximum likelihood, generalized linear models and extensions, random effects models.

Required Readings: There will be no assigned textbook for this class, but it is expected that students read at least this basic introduction to R available free on the R page – I will highlight readings from this through the semester.
Venables, W.N., Smith, D.M., and the R Core Team. 2015. An introduction to R: Notes on R: A programming environment for Data Analysis and Graphics. Version 2.15.1 (2012-06-22). An Introduction to R.

Online videos: RStudio provides a number of instructional videos that will be very useful for this course. You can access them at RStudio webinars and videos.

Software:
The computer laboratory portion of the class will depend on the use of the open-source statistical program R, **R-project** http://www.r-project.org/. R is free and available for download from the website above. All software is installed on the Stone building forestry computing labs. We will also download and install other R-packages through the semester.

WBIO 595-2 Grades

Lab Assignments	50%
Class Participation	20%
Student Research Project	30%

Lab Assignments: Students will be required to complete 5 lab assignments following key R labs through the semester. R lab assignment instructions will accompany each lab and will be due by the following lab.

Class Participation: this is an interactive graduate-level class, and as such, class participation through discussion, questions, leadership and co-teaching will constitute 20% of the grade for the class.

Student Project: The student project will form a key component of the joint goals of 540 and 595-1, and will culminate in a student designed and tailored project to explore the statistical basis of research design for their own research. There will only be one student project between both courses, but the grading for 595-2 for this class will be based on assessment of the students submitted data files, R code, and data analysis (figures, tables, etc.) used in the student project report.

Schedule

Week		
	1:	Intro to R
	2:	Data management
	3:	ANOVA I
	4:	ANOVA II
	5:	Likelihood I
	6:	Likelihood II
	7:	General Linear Models
	8:	General Linear Models
	9:	General Linear Models
	10:	Open lab for student projects (simulation)
	11:	Population Monitoring
	12:	Occupancy Monitoring
	13:	Thanksgiving
	14:	Power analysis
	15:	Open lab for student projects (power analysis)

Students with Disabilities Statement
- [UM's Disability Services for Students Office](#) and [EO/AA office](#) request you consider adding one of the following two statements to your course syllabi:
  - Students with disabilities may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). "Reasonable" means the University permits no fundamental alterations of academic standards or retroactive modifications.

    or

  - The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommason 154 or 406.243.2243. I will work with you and DSS to provide an appropriate modification.
- DSS also recommends instructors announce their intent to provide reasonable modifications on the first day of class

Student Conduct Code Statement
- A memo issued by the Provost's Office in 2005 asked that all syllabi include the following statement referencing the Student Conduct Code:
  - All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code.
- Please note:
  - The student conduct code gives instructors the right to address plagiarism (see §V(B)(1) for possible sanctions, but it is a good idea to add to your syllabus a statement more specifically identifying how you will handle grading when there is plagiarism in assignments.
    - If you do formally sanction a student for plagiarism UM is now keeping a record in student files of this, please send the CFC Associate Dean a letter to be forwarded to the Dean of Students for inclusion in the student's file.
  - Section V(C)(1) of the code outlines the process an instructor must follow for allegations of misconduct
    - Form 1 in the Appendix of the Student Conduct Code has a draft letter you may use to communicate your concerns to a student.
  - Section VI(E) identifies what steps a faculty can take if a student displays disruptive behavior in the classroom

Grading Option Statement
- Explanation: At UM, grading options for courses are traditional letter grade only (T); credit/no credit only (CR/NC), or student option/preference (O). The latter means students can choose to take a course either as traditional letter grade or as credit/no credit. For these latter courses, some students wish to exercise this option at the end of the semester. Some colleges at UM (e.g., CHS) prefer faculty to offer classes as "student preference." However, most CFC classes are offered Traditional letter grade only.
- If you offer your class for a letter grade only, you may experience fewer student requests on this issue at the end of the semester if you include the following statement:
  - Please note, this class is offered for traditional letter grade only, it is not offered under the credit/no credit option.
- If you are uncertain how your class is offered, check with CFC's Office of Student Services (Shonna, Jeanne, or Wendy).

Course Withdrawal Deadlines Statement
- The CFC Associate Dean would greatly appreciate it if you include a version of the following table about dropping a class on your syllabus or Moodle site. (See also Autumn 2015 Official Dates and Deadlines calendar)
  - Including this information on your syllabus helps students make decisions in a timely manner and helps avoid end of the semester student frustration. Historically there was an upswing of student requests to drop classes the last 2 weeks of the semester for reasons that do not fit "very limited and unusual circumstances" required after the 46th instructional day, but the widespread inclusion of the following information in syllabi by CFC faculty has greatly reduced this traffic in recent semesters.

Important Dates Restricting Opportunities to Drop a Course Autumn 2015:

To 15th instructional day	Students can drop classes on Cyberbear with refund	September 21 = last day
16th to 45th instructional day	Drop requires form with instructor and advisor signature, a $10 fee from registrar's office, student will receive a 'W' on transcript, no refund.	September 22 through November 2
Beginning 46th instructional day	Students are only allowed to drop a class under very limited and unusual circumstances. Not doing well in the class, deciding you are concerned about how the class grade might affect your GPA, deciding you did not want to take the class after all, and similar reasons are not among those limited and unusual circumstances. If you want to drop the class for these sorts of reasons, make sure you do so by the end of the 45th instructional day of the semester. Requests to drop must be signed by the instructor, advisor, and Associate Dean and a $10 fee applies.	November 3 – December 11