

# baseR:

## Data Management and Manipulation in R

### Spring Semester 2017

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Two sections of baseR, Data Management and Manipulation in R, will be offered in Spring Semester 2017. The course is available for the first time to Junior/Senior undergraduates as well as graduate students.

#### What is R?

R is an ever-expanding set of freeware analytical packages that has become the standard tool used in biological, ecological, and natural resource statistical analysis, as well as many other scientific fields. This course will teach you how to develop code in R for the management and manipulation of biological, ecological, and natural resource data.

#### What is baseR?

baseR is a self-paced, online course on fundamentals of data management and manipulation using R. It comprises three sections: (i) The R Environment, (ii) Basics of Data Management, and (iii) Data Manipulation in R. The course is designed to help R novices and those with some basic knowledge of R work within the R environment.

baseR is a precursor to statistical analyses that use R, but with an emphasis on data management and manipulation rather than statistical analyses *per se*. Basic statistical analysis of ecological data is taught on Biometry WILD 6500.

#### Why Should I learn R?

As an undergraduate, knowledge about R basics can help you accomplish classroom work requiring statistical analysis, as well as providing you with a skill set applicable to your eventual employment given that many state and federal agencies now analyze data using R.

If you are a graduate student, R is the foundation for many forms of research statistical analysis. Many of the advanced analytical classes available at USU use R, especially those in QCNR and those associated with the Ecology Center. Many advanced statistics courses taken by QNR/EC graduate students in Mathematics and Statistics also use R.

#### How is the baseR Course Structured?

There are no face-to-face lectures in baseR. Instead, students work through the online course on their own, and at their own pace. Open lab sessions will be offered twice a week, where students can meet with myself and/or a teaching assistant to answer questions related to R. A detailed outline of baseR topics is attached.

## **Are there any Prerequisites?**

There are no prerequisites other than a personal desire to learn how to use R as an analytical tool.

## **Can I Receive Credit for baseR?**

Students who take the course can register for 1 credit if they desire. This is a decision made in discussion with student faculty advisors (undergraduates), or major advisors and graduate committees (graduates). It is entirely a personal call contingent of your personal education objectives.

## **How is baseR Graded?**

There are 18 exercises associated with the three course sections. These exercises must be submitted by specific dates (~1/week) for credit to be received. Incorrect exercises will be returned until corrections have been made. The purpose of the "return until corrected" approach to grading is to ensure all students finish the course with archived coding and instructional tools that can be accessed later if needed. There is no true "right or wrong" to coding in R as long as desired analytical outcomes are reached.

## **Are there any Student-Required Tools?**

Each student must have their own personal computer. Students can establish personal R profiles, create their own library of R packages, work with whatever R GUI interface they desire (e.g., RStudio, RCommander), and use a MAC, Windows, or Linux OS. In short, it's your personal CPU, and your personal analytical environment.

## **What are the Course CRNs?**

baseR CRNs:	Undergrads	WILD4950	LO1	24708
	Grads	WILD6900	LO1	24720

## **Where Can I find more information?**

More detailed information on the courses will be provided to those who register. In the meantime, feel free to contact me directly via email or stop by my office, NR 126, if you have any questions.

Regards,

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