External Resources for Self-Directed Learning

Members of the cyberinfrastructure team have scoured the web for resources and tutorials to help you identify and learn new data skills.

Topic	Link	Environment
Basics/Syntax	R for Journalists [1] [2]	R
	R Tutorial [3] [3]	R
	The Unix Shell [4] [4]	Shell
	Resources for Better Science in Less Time [5]	R
Language	Hadley Wickam's Advanced R [6]	R
	swirl; Learn R in R [7]	R
	Programming with Python [8]	Python
	How to Teach Yourself R [9]	R
Statistics	Mark Gardener's Statistics Tutorial [10]	R
	In-Depth Introduction to Machine Learning [11]	R
Visualizations	Graph Catalog [12]	R
	Graphics Cookbook [13]	R
	Comprehensive ggplot Gallery [14]	R
	Producing Simple Graphs [15]	R
Geospatial Data	Introduction to Rasters [16]	R
	Data Intensive Tutorials [17]	Various
	EarthML Tutorials [18]	Python
Soil Science	List of Open Source Software Tools [19]	Various
Environmental Science	Quantitative Tutorials [20]	R
Basic Fisheries Analysis	Introduction to R and Tutorials [21]	R
Version Control	git Tutorial [22]	Shell
Web Scraping	Requests and BeautifulSoup [23]	Python
Cheat Sheets	Unix/Linux [24]	Shell
	RStudio IDE [25]	R
	R Markdown [26]	R
	R Markdown Reference Guide [27]	R
	Data Visualization [28]	R
	Package Development [29]	R
	Data Wrangling [30]	R
	RShiny [31]	R

Topic	Link	Environment
Full Course	Jenny Bryan's Stat 545 [32]	R
	[33]Transition to R: Free Online Course [34]	R
Community	Eco-Data-Science [35]	Various
	R-bloggers [36]	R
	Stack Overflow [37]	Various
	SESYNC Github [38]	Various

Many additional topics are available through the following websites or organizations. These are geared towards providing a lot of training material, which the cyberinfrastructure staff may be less familiar with.

- NEON #WorkWithData [39]
- Data Carpentry [40]
- Software Carpentry [41]

If you are looking to participate directly with a larger network of scientific coders, good starting points are the R-bloggers [36] and rOpenSci [42] communities. Finally, if you cannot find a resource for a particular topic that's written for your preferred environment, reach out to the cyberinfrastructure team at cyberhelp@sesync.org [43].

Links
[1] https://learn.r-journalism.com/en/
[2] http://www.scoop.it/t/r-for-journalists
[3] http://www.cyclismo.org/tutorial/R/index.html
[4] http://swcarpentry.github.io/shell-novice/
[5] http://ohi-science.org/betterscienceinlesstime/resources_and_community.html
[6] http://adv-r.had.co.nz/
[7] http://swirlstats.com/
[8] http://swcarpentry.github.io/python-novice-inflammation/
[9] http://samfirke.com/2017/06/15/how-to-teach-yourself-r/
[10] http://www.gardenersown.co.uk/Education/Lectures/R/anova.htm
[11] https://www.r-bloggers.com/in-depth-introduction-to-machine-learning-in-15-hours-of-expert-videos/
[12] http://shiny.stat.ubc.ca/r-graph-catalog/
[13] http://www.cookbook-r.com/Graphs/
[14] http://docs.ggplot2.org/current/
[15] http://www.harding.edu/fmccown/r/
[16] http://geoscripting-wur.github.io/IntroToRaster/
[17] https://www.earthdatascience.org/tutorials/
[18] http://earthml.pyviz.org/
[19] http://casoilresource.lawr.ucdavis.edu/software/
[20] http://environmentalcomputing.net/
[21] https://sfg-ucsb.github.io/fishery-manageR/
[22] https://www.atlassian.com/git/tutorials/
[23] https://www.dataquest.io/blog/web-scraping-tutorial-python/
[24] https://fosswire.com/post/2007/08/unixlinux-command-cheat-sheet/
[25] https://www.rstudio.com/wp-content/uploads/2016/01/rstudio-IDE-cheatsheet.pdf
[26] https://www.rstudio.com/wp-content/uploads/2016/03/rmarkdown-cheatsheet-2.0.pdf
[27] https://www.rstudio.com/wp-content/uploads/2015/03/rmarkdown-reference.pdf
[28] https://www.rstudio.com/wp-content/uploads/2015/12/ggplot2-cheatsheet-2.0.pdf
[29] https://www.rstudio.com/wp-content/uploads/2015/06/devtools-cheatsheet.pdf
[30] https://www.rstudio.com/wp-content/uploads/2015/02/data-wrangling-cheatsheet.pdf
[31] https://www.rstudio.com/wp-content/uploads/2016/01/shiny-cheatsheet.pdf
[32] https://stat545.com/
[33] http://stat545.com/topics.html

[34] https://greggilbertlab.sites.ucsc.edu/teaching/rtransition/
[35] https://eco-data-science.github.io/
[36] https://www.r-bloggers.com/
[37] https://stackoverflow.com/
[38] https://github.com/sesync-ci
[39] https://www.neonscience.org/resources/data-tutorials
[40] http://www.datacarpentry.org/lessons/
[41] http://software-carpentry.org/lessons/
[42] https://ropensci.org
[43] mailto:cyberhelp@sesync.org