**Syllabus**

**Course Title**

Developing Data Products

**Course Instructor(s)**

The primary instructor of this class is [Brian Caffo](http://www.bcaffo.com)

Brian is a professor at Johns Hopkins Biostatistics and co-directs the [SMART working group](http://www.smart-stats.org)

This class is co-taught by Roger Peng and Jeff Leek. In addition, Sean Kross and Nick Carchedi have been helping greatly.

**Course Description**

A data product is the production output from a statistical analysis. Data products automate complex analysis tasks or use technology to expand the utility of a data informed model, algorithm or inference. This course covers the basics of creating data products using Shiny, R packages, and interactive graphics. The course will focus on the statistical fundamentals of creating a data product that can be used to tell a story about data to a mass audience.

In this class students will learn a variety of core tools for creating data products in R and R Studio in specific. Students will be evaluated via quizzes and a culminating project.

**Course Content**

The lectures will be taught over four weeks with the third week dedicated to creating R packages.

The weeks are organized as follows

1. Shiny, rCharts, manipulate, googleVis
2. Presenting data analysis, slidify, R Studio presenter.
3. Students creating and deploying their projects
4. Creating R packages, classes and methods, yhat.

**Github repository**

The most up to date information on the course lecture notes will always be in the Github repository

The data science specialization is here

[https://github.com/bcaffo/courses/tree/master/09\\_DevelopingDataProducts](https://github.com/bcaffo/courses/tree/master/09%5C_DevelopingDataProducts)

Please issue pull requests so that we may improve the materials.

**Lecture Materials**

Lecture videos will be released at the beginning of the class and will be available thereafter. You are welcome to view them at your convenience. Accompanying most video lectures will be a PDF copy of the slides. The ones that are pure demonstration may not have associated pdfs.

**Assessments and Grading Policy**

* Quiz 1 = 20%
* Quiz 2 = 20%
* Quiz 3 = 20%
* Course Project = 40%

70% is required for passing the class and 90% for distinction.

**Weekly quizzes**

The weekly quizzes cover the material from that week and previous weeks. The quizzes don't always exactly correspond to the material for that week alone. However, the material is always covered before the quiz is due. To access the quizzes, click the Quizzes link in the left navigation bar.

* The class always starts on a Monday and last four weeks.
* There are three quizzes.
* All quizzes are available on the first day of the session
* Quizzes are due BEFORE 11:30 PM UTC on the Sundays. Quiz 1 is due on the Sunday at the end of Week 1, Quiz 2 is due on the Sunday at the end of Week 2, and Quiz 3 is due at the end of Week 4. There is no quiz for Week 3 in order to allow time for Course Project preparation and submission.
* Go to the quiz itself for the exact times.

**Quiz Scoring**

You may attempt each quiz for credit up to 3 times. Your effective score will be the highest score of all the allowed attempts made before the hard deadline.

**Hard deadlines and soft deadlines for Quizzes 1 and 2**

The reported due date is the soft deadline for each quiz. You may turn in quizzes 1 and 2 for partial credit up to five days after the soft deadline. The hard deadline is the Friday after the Quiz is due at 23:30 UTC. Each day after the soft deadline will incur a 10% penalty, but if you use a late day, the penalty will not be applied to that day. Quizzes submitted after the hard deadline will not receive any credit.

**\*\* PLEASE NOTE: The due date for Quiz 3 IS the hard deadline. You will not receive credit for submissions made after the due date \*\***

**Late Days for Quizzes**

You are permitted 5 Late Days for quizzes in the course. If you use a Late Day, your quiz grade will not be affected. Note: Late Days may not be used for the Course Project.

**Course Project**

The Course Project is an opportunity to demonstrate the skills you have learned during the course. It is graded through peer assessment.

Details of the Course Project are available from the beginning of the course session, and your work will be due BEFORE 11:30 PM UTC on the Sunday at the end of Week 3. The deadline for Course Project submission is absolutely firm, and Late Days MAY NOT be used for the Course Project.

To access the Course Project interface, click the Course Project link in the left navigation bar.

After the submission window closes, the evaluation phase will open. During the evaluation phase, you will evaluate and grade at least four submissions from your classmates and perform a self-evaluation of your own project. All four peer evaluations and your self-evaluation are due BEFORE 11:30 PM UTC on the Sunday at the end of Week 4. If you don't complete all evaluations by the end of the evaluation phase, your own Course Project score will be reduced by 20%.

**Typos**

* We are prone to a typo or two - please report them and we will try
* to update the notes accordingly. In some cases, the videos may
* still contain typos that have been fixed in the lecture notes. The
* lecture notes represent the most up-to-date version of the course
* material.

**Differences of opinion**

Keep in mind that currently data analysis is as much art as it is science - so we may have a difference of opinion - and that is ok! Please refrain from angry, sarcastic, or abusive comments on the message boards. Our goal is to create a supportive community that helps the learning of all students, from the most advanced to those who are just seeing this material for the first time.

**Technical Information**

Regardless of your platform (Windows or Mac) you will need a high-speed Internet connection in order to watch the videos on the Coursera web site. It is possible to download the video files and watch them on your computer rather than stream them from Coursera and this may be preferable for some of you.

**Here is some platform-specific information:**

*Windows*

The Coursera web site seems to work best with either the Chrome or the Firefox web browsers. In particular, you may run into trouble if you use Internet Explorer. The Chrome and Firefox browsers can be downloaded from: *Chrome:* [*http://www.google.com/chrome*](http://www.google.com/chrome)Firefox: <http://www.mozilla.org>

*Mac*

The Coursera site appears to work well with Safari, Chrome, or Firefox, so any of these browsers should be fine.