

D213 Advanced Data Analytics

Welcome, Study Plan and Course Pacing Guide!

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NOT SURE WHERE TO START IN THE COURSE?? You are in the right place!

Your D213 instructor team has put together the following guide full of resources and course tips to help you get the most out of this course and to help you pass the course in the most efficient way possible! 😊

Welcome to D213 – Advanced Data Analytics

In this course, you will learn about emerging concepts in data analysis. You will study time series, ARIMA, machine learning, neural networks, natural language processing, randomness, and unconventional data sources. Your competence in this course will be demonstrated by successfully completing two performance assessments: Time Series Analysis and Sentiment Analysis.

D213 STUDY PLAN OUTLINE

This study plan outline results from student feedback on what has helped your fellow Night Owls succeed!

What seems to be the most efficient way to complete this course, as reported by many students, is:

- Working through the Datacamp Learning Resources
- Reviewing the Webinar Videos and PowerPoints
- Meeting with the Course Instructor
- Before working on the performance assessment.



This course has many emerging concepts; therefore, if you encounter a concept, you aren't familiar with, that may be an excellent time to review the course materials and the videos and/or talk with your CI.

D213 RECOMMENDED STUDY PLAN

The study plan below has helped many students succeed in this course.

1. **Get familiar with the course and the two performance assessments**

- a. Click the Go to Course Material button on the course homepage to access Datacamp resources:

GO TO COURSE MATERIAL

- b. There are ten DataCamp courses covering the two tasks of D213. Task 1 is time series analysis and requires the stationarity of the data before modeling. You can use the KPSS or ADFuller test to evaluate stationarity.
- c. Task 2 is sentiment analysis and requires neural networks and NLP. You will identify the type of neural network for your analysis and apply TensorFlow and NLP techniques for your analysis.



2. **Select your programming language, either Python or R.**

- a. In making your choice of language, consider the need of your current job and career aspirations.
- b. Review [R or Python](#) for some side-by-side comparisons.
- c. D213 can be implemented with either R or Python, but many students found it easier with Python due to compatibility issues with TensorFlow.

3. **Select one of the available data sets from the Weblinks**

- a. The data sets can be found by selecting *View Task* on the course page and then selecting the *Data Sets and Associated Data Dictionaries* link under Introduction or *WEB LINKS at the bottom of the page*.
- b. Both data sets (Churn & Medical) for Task 1 are familiar ones already used in previous courses. In Task 2, you will select just one dataset from the three groups: Amazon Product Data set, UCSD Recommender Systems Data Sets, and UCI Sentiment Labeled Sentences Data Set.

4. **Review and study the materials and resources for Time Series Analysis.**

- a. **DataCamp:** The Data Camp learning resources include Python and R courses. Complete the Time series courses for the language (Python or R) you selected. DataCamp resources can be found by selecting the *Go To Course Material* on the course page.
- b. **Webinars:** Watch recordings or attend the live webinars by Dr. Elleh on the 3rd Sunday of every month at 3 pm EST and Dr. Sewell on Thursdays at 4 pm EST. Recordings can be located by selecting *Announcements* on the right-hand side of the course page, then selecting *View All*. You can enroll in live webinars by selecting *Explore Cohort Offerings* on the course page.

5. **Panopto Video Recording:**

There is no Panopto video Recording requirement for either task in this course



6. Study Sentiment Analysis

- a. **DataCamp:** The DataCamp learning resources include both Python and R courses. Complete the Sentiment Analysis courses for the language (Python or R) you selected. DataCamp resources can be found by selecting the *Go To Course Material* on the course page.
- b. **Webinars:** Watch recordings or attend the live webinars by Dr. Elleh on the 3rd Sunday of every month at 3 pm EST and Dr. Sewell on Thursdays at 4 pm EST. Recordings can be located by selecting *Announcements* on the right-hand side of the course page, then selecting *View All*. You can enroll in live webinars by selecting *Explore Cohort Offerings* on the course page.

D213 COURSE PACING GUIDE

The amount of time any course will take you to complete depends on many factors, including your background, previous experience with the course material, and the amount of time you can devote to studying and practicing. Many students can complete this course in 4-6 weeks. To help you stay motivated while progressing toward your goals, your course instructor team has put together a **45-day Challenge** for this course. To meet the challenge, we suggest the following pacing:

- **Week 1:** Familiarize yourself with the course resources (DataCamp and instructor-provided resources). Choose your language, either Python or R. Review Task 1 and follow the requirements for completing the task. Choose your data set and begin performing the steps in Task 1.
- **Week 2:** Clean and transform your dataset, create your ARIMA model, perform forecast, evaluate your model, write your report, and submit Task 1. Work on revisions to Task 1 as needed.
- **Week 3:** Review Task 2; choose your data set and programming language. Follow the requirements for completing the task. and begin performing the steps in Task 2.
- **Week 4:** Clean, modify, and transform your dataset, create your neural network model, perform forecast, evaluate your model, write your report, and submit Task 2.
- **Week 5:** If PA has not passed in Week 4, continue work on revisions to Task 2 as needed.

**Take the D213
Advanced Data Analytics
30-Day Challenge!**



Where to Get Help ... for Each Section of the Assessment!

A

Choosing a good research question!

- Review Dr. Elleh's Cohort PowerPoint in "Group Files" under the Course Chatter.
- Review Dr. Sewell's tip sheet document in "Group Files" under the Course Chatter.

C

Data Preparation!

- Dr. Elleh's webinars videos (available via Announcements > View All on the course page)
- Review Dr. Sewell's webinars in the Announcement and tip sheet document in "Group Files" in the Course Chatter

B

Method Justification!

- Dr. Elleh's webinars (available via Announcements > View All on the course page)
- DataCamp Python or R courses (available via the GO TO COURSE MATERIAL button on the course page).

D & E

Model Identification and Analysis/Data Summary and Implication!

- Dr. Elleh's webinars (available via Announcements > View All on the course page)
- Dr. Sewell's Video in the Course Announcement. Click on View All on the Course Page.
- Nallani, A. (2019). Neural Network Models in R. under Course Information on the Homepage.

Where to Get Help ... for Each Section of the Assessment!

F

Summary & Implications!

- Dr. Elleh's webinars (available via Announcements > View All on the course page)
- Dr. Sewells Video in the Course Announcement.

H

Acknowledge Sources!

- Every source in your write-up must be cited within your document.
- Student Writing Center
 - How to document sources (article)
 - How to Cite Webpages (article)
 - How to Cite Webpages (video)

G

List the Web Sources

- WGU Writing Center
- Student Success Center
- Dr. Elleh's Cohort PowerPoint
- APA 6th or 7th Edition.

I

Professional Communication!

- www.grammarly.com
- WGU Student Writing Center
- I Need Help with Professional Communication, which includes links to Writing Center resources on writing, grammar, and more!
 - Contact Assessment Services at 877-HELP-WGU Option 2 if you:

Your course instructors are here to help break it down for you. You can email or schedule an appointment if you have questions about the course content. Your success is our goal!

“Everything should be made as simple as possible, but not simpler.”

- Albert Einstein, 1933.



Student Wellbeing

<https://westerngovernorsuniversity.sharepoint.com/sites/StudentWellbeingServices>

D213 Video Links - Dr. Elleh

[Installing TensorFlow in Python and R](#)
[Preparing Python and R Environments](#)
[Splitting the Data and Creating the Model](#)

Webinar Recordings and Powerpoints - Dr. Sewell:

D213 Webinar 1 recording for Task One ARIMA is [ARIMA I here](#). The Powerpoint [deck is here](#).

D213 Webinar 2 recording for Task One ARIMA is [D213 Webinar ARIMA II](#). The Powerpoint [deck is here](#).

D213 Webinar 3 recording: [D213 Webinar 3](#) and the accompanying [D213 Webinar 3 PPT](#).

D213 Webinar 4 recording: [D213 Webinar 4 Video](#) and the accompanying [D213 Webinar 4 PPT](#).

D213 Webinar 5 recording: [D213 Webinar 5 SA](#) and the accompanying [D213 SA Webinar 5.pptx](#)

D213 Webinar 6 recording: [D213 Webinar 6 SA](#) and the accompanying [\[WS1\] D213 Webinar 6 PPT](#)