C741 – Course 4 "Fundamentals: Statistics for Data Analytics" (3cr)

- **45hr/cr – 134hr (4wk) – 3 exams (52hr) – 49hr Video Lectures – 33hr Textbook**
- **Definition:** Statistical techniques and methods applied in real world, inferential, parametric, and non-parametric stats. Regression analysis and variance. PCA, t-tests, linear regression, ANOVA. Categorical data analysis techniques. Logistic regression. Regressions scenarios and models.
- **(Optional) Self-Prep Training**, 22.0hr (2 wk) – $0 – 22hr Video – 1/15 : 1/31
  - DONE – 2.00 hr – LINK – Microsoft, Essential Math for Machine Learning: Python Edition – **Excellent** – (expires June 2020)
  - DONE – 1.00 hr – LINK – Harvard Introduction to Probability (but only 10% was videos to watch; skipped 90% which was text book reading)
  - HALF DONE – 3.75 hr – LINK – Columbia – Statistical Thinking for Data Science and Analytics – Excellent … but stopped midway thru Lesson 2 of 5 because got WGU materials to start for first 3 steps
  - HALF DONE – 15.25 hr – LINK – Khan Academy – Statistics and Probability – *Dropped once got access to course because Chatter indicates good, but not a match for this course*
- **Course Setup / Plan of Action / Installation:** 3.25hr (1 d) – 4/13 : 4/14
  - DONE – 3.25 hr – Prepare my Course Study Plan by reviewing all materials and listing out below
- **Instructor's Recommended Pre-Training**, 28.25hr (1 wk) – 19.50hr Video – 8.85hr Textbooks – 4/14 : 4/21
  General Statistics Baseline, TextBooks: 8.85hr
  - DONE – 0.50 hr – LINK – Pre-Test to ensure Know Statistics (top of page of prior link)
  - DONE – 6.75 hr – LINK – WGU Intro to Stats Lessons 1 – 20
  - DONE – 0.75 hr – LINK – Introduction to Statistics (692 pg!!!, skim read, then keep as reference)
  - DONE – 0.25 hr – LINK – Statistics Symbols
  - DONE – 0.10 hr – LINK – Test out R code snippets from ZyBooks
  - DONE – 0.25 hr – LINK – Probability, Bayes Theorem
  - DONE – 0.25 hr – LINK – Probability - Finding the probability of an event
  General Statistics Baseline, Videos: 19.50hr
  - DONE – 9.75 hr – LINK – Brandon Folz You Tube Channel for statistics Concepts (**best I've seen**, even beats Khan Academy, did full set on 2x)
  - DONE – 0.50 hr – LINK – Basic Statistics Understanding (Skim on 2x)
  - DONE – 0.50 hr – LINK – Intro to Stats Playlist (Skim)
  - DONE – 6.75 hr – LINK – More (optional) YouTube Stats Playlists; Excellent section augmenting Stats baseline (some I've never seen before, really thorough)
  - DONE – 1.75 hr – LINK – StatQuest Video Training (Excellent simplified overviews of PCA, Linear and Logistic Regression, and other)
  - DONE – 0.25 hr – LINK1, LINK2 – BIC (Bayesian Information Criterion) vs. AIC (only one Q, so focus on high-level concepts)
- **Course Material (ZyBooks), Quizzes, Take Notes**, 21.00 hr (x wk) – 21.00 hr Interactive TextBooks – 4/21 : 4/25
  - DONE – 0.25 hr – LINK – Chapter 1 – Getting Started
  - DONE – 4.00 hr – LINK – Chapter 2 – Statistics Background
  - DONE – 3.00 hr – LINK – Chapter 3 – Parametric Analysis (15q)
  - DONE – 3.00 hr – LINK – Chapter 4 – Nonparametric Analysis (4q)
  - DONE – 2.00 hr – LINK – Chapter 5 – Categorical Analysis (12q)
  - DONE – 2.25 hr – LINK – Chapter 6 – Principal Component Analysis (9q)
  - DONE – 3.50 hr – LINK – Chapter 7 – Multiple Regression (14q)
  - DONE – 3.00 hr – LINK – Chapter 8 – Logistic Regression (14q)
  - DONE – 0.00 hr – LINK – Chapter 9 – Final Steps
- **Supplemental Training to Course Materials,** 7.50 hr (1 wk) – 5.00hr Training Videos (67%) – 2.50 hr TextBooks (33%) – 4/26 : 4/27
  - DONE – 1.00 hr – LINK1, LINK2, LINK3, LINK4, LINK5 – ZScores: Wikihow article, funny video, statistics show, West Texas A&M, My Secret Math Tutor
  - DONE – 0.50 hr – LINK1, LINK2, LINK3, LINK4 – T-Tests (Distributions with the same mean)
  - DONE – 0.50 hr – LINK1, **LINK2** – Chi-Square from Statistics Show, 2-YouTube Goodness of Fit (outstanding Link2)
  - DONE – 0.50 hr – LINK1, LINK2, LINK3 – Fishers Exact Test using Excel (multiply by 2 for a 2-tailed result) – use Chi-Square if > 20 observations, 2x2 matrix, factorial
  - DONE – 0.50 hr – LINK – Parametric and Non- Parametric Test (outstanding)
  - DONE – 0.25 hr – LINK1, LINK2 – Linear Algebra Intro (PCA, Eigen Vectors)
  - DONE – 1.25 hr – LINK1, LINK2, LINK3, LINK4, LINK5, LINK6, **LINK7** – Eigen Vectors
  - DONE – 0.50 hr – LINK1, **LINK2**, **LINK3**, LINK4, LINK5, **LINK6** – PCA Tutorials
  - DONE – 0.50 hr – **LINK1**, LINK2, LINK3 – ANOVAs training
  - DONE – 0.75 hr – LINK1, LINK2, **LINK3**, **LINK4**, **LINK5**, LINK6, LINK7, LINK8 – Monte Carlo Excel Examples, R Example, and Simulation for Dummies, and YouTube training

- DONE – 0.25 hr – <u>LINK1</u>, <u>LINK2</u> – Review and Compare Different Healthcare Hypothesis Tests, Picking a Test
- DONE – 0.50 hr – BOOK – Review my three statistics books
  - **Final Exam + Prep**, 51.70hr (2 wk) – 4/25 : 5/10
    Ignore – Test Prep, Don't Repeat – 2.60 hr
    - ~~DONE~~ – 0.50 hr – <u>LINK</u> – ~~Flashcards from Statistics in Psychology (do not repeat)~~
    - ~~DONE~~ – 1.50 hr – <u>LINK1</u>, <u>LINK2</u> – ~~Multiple Regression Sample Test Questions (folder)~~
    - ~~DONE~~ – 0.50 hr – <u>LINK1</u>, <u>LINK2</u>, <u>LINK3</u> – ~~Logistic Regression Sample Test Questions~~
    - ~~DONE~~ – 0.10 hr – <u>LINK1</u>, <u>LINK2</u> – ~~AP Stats Exam~~
    Test Prep, Existing Flashcards – 7.25 hr
    - DONE – 0.75 hr – <u>LINK</u> – Course e-Flashcards, Chapter 2 – Statistics Background (0q)
    - DONE – 1.25 hr – <u>LINK</u> – Course e-Flashcards, Chapter 3 – Parametric Analysis (15q)
    - DONE – 0.75 hr – <u>LINK</u> – Course e-Flashcards, Chapter 4 – Nonparametric Analysis (4q)
    - DONE – 0.25 hr – <u>LINK</u> – Course e-Flashcards, Chapter 5 – Categorical Analysis (12q)
    - DONE – 0.25 hr – <u>LINK</u> – Course e-Flashcards, Chapter 6 – PCA Principle Component Analysis (9q)
    - DONE – 0.75 hr – <u>LINK</u> – Course e-Flashcards, Chapter 7 – Multiple Regression (14q)
    - DONE – 0.50 hr – <u>LINK</u> – Course e-Flashcards, Chapter 8 – Logistic Regression (14q)
    - DONE – 1.25 hr – PDF FILE from course emails – 19 pg to read and re-read and practice
    - DONE – 1.25 hr – <u>LINK</u> – Flashcards - search for C741
    - DONE – 0.25 hr – <u>LINK</u> – Practice quizlets **specific to WGU C741 – Model Flashcards**
    Test Prep, More Training – 6.10 hr
    - DONE – 4.50 hr – <u>LINK1</u>, <u>LINK2</u> (File) – WGU 741 Course - XL Video Workbook - Training Videos from Course Chatter (downloaded XL)
    - DONE – 0.75 hr – C741 Next Attempt Study Plan, watch videos, read text (revisit later when make flashcards)
    - DONE – 0.75 hr – <u>LINK1</u>, <u>LINK2</u>, <u>LINK3</u> – TI Calculator Tutorials
    - DONE – 0.10 hr – <u>LINK</u> – Short Video How to find Z Score between Two Others using TI Calculator
    Test Prep, Make My Own Flashcards – 11.75 hr
    - DONE – 5.25 hr – <u>LINK</u> – Review Existing Flashcards for C741 at Cram.Com, adding good ones to my own list as I go
    - DONE – 1.50 hr – Add to my flashcards from the XL Video Workbook + PDF file (19pg) + Google WGU C741
    - DONE – 5.00 hr – Add to my flashcards from Re-Review of ZyBooks Course Materials + my notes
    Dr. Sewell Videos – 14.00 hr
    - DONE – 0.25 hr – <u>LINK</u> – Calculate EigenValue from matrix
    - DONE – 4.25 hr – <u>LINK</u> – December Slides – T-Test (outstanding, best study guide of everything that came before)
    - DONE – 5.50 hr – <u>LINK</u> –May slides – PCA (Principle Component Analysis) – hours on calculator and working the Golden Oldies
    - DONE – 1.25 hr – <u>LINK</u> – January Slides/Video – 60% repetition now with golden oldies, so faster…but still worth repeating
    - DONE – 1.75 hr – <u>LINK1</u> – March Slides/Video – Categorical Analysis #1 – Chi Square testing
    - DONE – 1.00 hr – <u>LINK1</u>, <u>LINK2</u> – April Slides/Video – Categorical Analysis #2 – Fisher Test
    Practice Tests + Re-Studying – 7.00 hr
    - DONE – 0.50 hr – <u>LINK1</u>, <u>LINK2</u>, <u>LINK3</u>, <u>LINK4</u>, – Cram Website Practice Problems
    - DONE – 0.25 hr – <u>LINK</u> – Exams with Solutions
    - DONE – 3.50 hr – Pre-Test #1 – PASS! – Review all answers
    - DONE – 0.25 hr – <u>LINK1</u>, <u>LINK2</u> Compare Statistical tests
    - DONE – 2.50 hr – Pre-Test #2 – PASS! – Review all answers
    Do the Final – 3.00 hr
    - DONE – 1.00 hr – Setup Laptop, Pass Config Test, Schedule Exam, Wait, Troubleshoot, etc.
    - DONE – 2.00 hr – Final Exam (all the effort above was for this one make or break test)