C748 – Course 10 "Programming: SAS 2 – Statistical Business Analyst for SAS 9.4 cert (A00-240)" (4cr)

- **30.1hr/cr – 120.25hr (5wk) – 76hr Exam Prep (1,782 Q's) – 26.25hr Video Lectures – 15hr Textbook & Labs – 3hr Waste**
- *Definition: Prepare for "Base Statistical Business Analyst for SAS 9 Certification (A00-240). Conduct, interpret, and present complex statistical data analysis in SAS. Prepares data sets as input for predictive models. Optimize model performance. Evaluate ANOVA, linear regress, and logistic regression models.*

- **Course Setup / Plan of Action / Installation:** 5.00 hr (3d) – 9/13 : 9/15
  - DONE – 1.00 hr – EMAIL – from Mentor (review links & attachments, use good ones), received day before able to start course…nice
  - DONE – 0.50 hr – EMAIL – Tip Sheet v3 from Course Instructor, arrived day or two after start course
  - DONE – 2.75 hr – LINK – WGU website + Read all Course Chatter notes and docs, lots of good info, distributed below as appropriate
  - DONE – 0.75 hr – LINK – Lynda's Reddit Post and links

- **Course Work,** 15.75 hr (5 d) – 15.25hr Video – 0.50 hr Course Work – 9/16 : 9/21
  - DONE – 0.00 hr – LINK – Create SAS Account; use SAS Studio OnDemand just like prior course
  - DONE – 9.25 hr – LINK.OLD, LINK.NEW – Course #1 – "Stats 1: Intro to ANOVA, Regression, and Logistic Regression"
    …product code = G70206814 (but eLearning option is free so don't need this)
  - DONE – 6.00 hr – LINK – Course #2 "Predictive Modeling Using Logistic Regression"
    …product code = G70206813
  - SKIP – 0.50 hr – LINK – Practice Labs Sandbox (use SAS OnDemand, this was just same orientation as prior classes)
  - *FYI – Moved uCertify Practice Exams and Flashcards down lower as part of Exam Prep*

- **Supplemental Training,** 19.00 hr (5 d) – 10.00 hr Video – 9.00 hr Text – 9/21 : 9/25
  (1) Textbooks / Websites: 9.00 hr Textbooks
  - DONE – 1.00 hr – LINK1, LINK2, LINK3 – Skim Read Good Examples: (1) Logistic Regression, (2) Sensitivity, +/-predictive values, etc., (3) ListenData overview
  - DONE – 0.65 hr – LINK1, LINK2 – Skim Read ROC Curves (Ignore these: LINKX1, LINKX2, LINKX3)
  - DONE – 0.15 hr – LINK1, LINK2, LINK3 – Skim Read (1)(2) Gain and Lift Charts, (3) Prevalence (probability of having disease)
  - DONE – 0.25 hr – LINK1, LINK2, LINK3 – Skim Read UCLA stats website
  - DONE – 0.25 hr – LINK – Skim Read Q: Proc Logisitic, why aren't coefficients consistent with odds ratio?
    …(because uses effect coding for coefficients but dummy vars for odds ratio)
  - DONE – 0.10 hr – LINK – Skim Read Q: Hierarchy=single is default, Hiearchy=none to fix, know which combination of vars produce error
  - DONE – 0.05 hr – LINK – Skim Read Q: "LINK" Statement (like a GOSUB)
  - DONE – 0.05 hr – LINK – Skim Read Q: "HOVTEST" statement (Homogeneity of Variance in one-way models)
  - DONE – 0.25 hr – LINK1, LINK2, LINK3 – Skim Read ANOVA Refresher (3rd link = giant 200+ pg PDF = identical SAS training course, skip it)
  - DONE – 0.50 hr – PDF – Skim Read Review my C741 Statistics for Data Analysis Course Notes
    …(ANOVA, linear and logistic regression related areas)
  - DONE – 0.50 hr – PDF – Skim Read Course Chatter 44pg "00 SAS Summary Stats.pdf" (nothing new, = levelset)
  - DONE – 0.25 hr – LINK – Exam Content Guide
  - DONE – 5.00 hr – LINK – Skim Read (401pg) – Exam Prep Guide, Joni Shreve book, download PDF f/60days from WGU library
  (2) Videos: 10.00 hr Videos
  - DONE – 1.00 hr – LINK1, LINK2, LINK3, LINK4 – YouTube (1) Descriptive Stats, (2) Linear Regr, (3) Logistic Regr, (4) Model Selection
  - DONE – 0.10 hr – LINK1 – YouTube Predictive Models
  - DONE – 0.40 hr – LINK1, LINK2, LINK3 – YouTube One-Way ANOVA & Two-Way ANOVA
  - DONE – 0.50 hr – LINK1, LINK2 – YouTube QQ Plots, ROC curves, sensitivity, specificity (re-watched #2 b/c was side tracked and missed some)
  - DONE – 0.35 hr – LINK1, LINK2 – YouTube Gain Videos and Predictive Modeling (LINK2 = excellent explanations)
  - DONE – 0.15 hr – LINK – YouTube Joni Shrive book: SAS Cert Prep Guide – Statistical Business Analysis uses SAS9 (older than 9.4)
  - DONE – 3.50 hr – LINK – Re-watch all videos for Course #1, but skip questions and quizzes…understand what was missed on first pass
  - DONE – 3.00 hr – LINK – Re-watch all videos for Course #2, but skip questions and quizzes…understand what was missed on first pass
  (3) Lookups: 0.00 hr (time included in practice exam & flashcard sections below, not here)
  Looked up this info while studying Flashcards & Practice Q's below
  - DONE – 0.00 hr – LINK – Definition: C-Statistic (AUC, upper left corner = higher c stat = better)
  - DONE – 0.00 hr – LINK – Definition: AIC – Akaike Information Criterion, select best of competing models (predictor variable combinations)
  - DONE – 0.00 hr – LINK1, LINK2 – Definition: "Quasi-complete-separation" = no overlap predictors = probability of 1 or 0 = infinite or ÷ by 0
  - DONE – 0.00 hr – LINK – Definition: Logistic Regr., "Concordant vs. Discordant Pair Obs's";
    …where concordant = X and Y move in same direction (both incr or decr); discordant = opposite signs
  - DONE – 0.00 hr – LINK – Definition: "Cutoff point changes as move along ROC Curve"
    …pg 546-8 (excellent discussion classification tables too)
  - DONE – 0.00 hr – LINK – Definition: "One-way ANOVA" & "within-group"
  - DONE – 0.00 hr – LINK – Definition: "Proc Cluster" to group like predictor variables together
  - DONE – 0.00 hr – LINK – Definition: "GLM Adjustments" Tukey (pairwise) vs Dunnett (control)

- DONE – 0.00 hr – <u>LINK</u> – Definition: "PROC GLM vs PROC REG" (GLM is simpler, not need dummy vars like with REG)
- DONE – 0.00 hr – <u>LINK</u> – Definition: "How to read PROC REG Output"
- DONE – 0.00 hr – <u>LINK1</u>, <u>LINK2</u> – Definition: "Logit" – Nice graph at first answer; "the logit is a linear function of the predictors"
- DONE – 0.00 hr – <u>LINK</u> – Definition: "How to read PROC LOGISTIC Output" (in particular k. Criterion)
- DONE – 0.00 hr – <u>LINK</u> – Definition: "Monotonic" with nice scatterplots, Spearman Corr = monotonic,
  …Pearsons's Corr = monotonic + linear; Spearman Corr > 0=non-monot, -1/+1=perfect monot
- DONE – 0.00 hr – <u>LINK</u> – Definition: "Training vs. Validation vs. Test Dataset"
- DONE – 0.00 hr – <u>LINK</u> – Definition: "Calculate Kolmogorov-Smirnov (KS) statistic"
  …(read only pg 1711 where KS = dist btw CDF nd EDF) = 1 Q on exam

- **Supplemental Training #2**, 1.75 hr (1 d) – 1.00 hr Video – 0.75 hr Text – 10/5 :10/5
  Instructor sent these links when I requested code for registering exam (some had previously seen, so just skimmed them)
  (1) Textbooks / Websites: 0.75 hr Textbooks
- DONE – 0.15 hr – <u>LINK</u> – Prepare Input for Predictive Models
- DONE – 0.50 hr – <u>LINK</u> – SAS Intro to Regression Procedures (48pg)
- DONE – 0.10 hr – <u>LINK</u> – Levels of Measurement in Stats (nominal > ordinal > interval > ratio)
  (2) Training Videos: 1.00 hr Videos
- DONE – 0.25 hr – <u>LINK1</u>, <u>LINK2</u> – YouTube Logistic Regression Overviews
- DONE – 0.10 hr – <u>LINK</u> – SMOTE Concepts
- DONE – 0.20 hr – <u>LINK1</u>, <u>LINK2</u> – Multiple Regression (seen these before so mostly skipped, excellent)
- DONE – 0.10 hr – <u>LINK1</u>, <u>LINK2</u> – ANOVA (seen these before so mostly skipped, excellent)
- DONE – 0.10 hr – <u>LINK</u> – Kruskal-Wallis (ANOVA) vs. Mann Whitney (t-Tests)
- DONE – 0.30 hr – <u>LINK</u> – Confusion Matrix (Excellent)

- **Practice Exams, Questions, & Flashcards:** 43.25 hr (14 d) – 43.25 hr Test Prep – 9/25:10/8 – 1,782 Q's
  Free Flashcards & Practice Questions: 27.50 hr (8 d) – 27.50 hr Test Prep – 9/25 : 10/2 – 1,163 Q's
  Lots of Q's repeat over and over across sites, but my theory = "practice and understand 1,500+ fairlyredundant questions, and you'll should be able to easily pass 60 unique questions on the live exam"
- DONE – 4.00 hr – <u>LINK</u> – (50 Q's) Free Quizlet Flashcards (Google each term or response not understood…time consuming, but necessary)
- DONE – 1.00 hr – <u>LINK</u> – (10 Q's) Free SAS Sample Questions
- DONE – 0.25 hr – <u>LINK</u> – (10 Q's) Free AnalyticsExam Sample Questions (9/10 were duplicate Q's from prior link)
- DONE – 3.25 hr – <u>LINK</u> – (72 Q's) Free ProProfs Quiz (lot of Googling to figure out why on answers)
- DONE – 0.50 hr – <u>LINK</u> – (15 Q's) ListenData Advice Guide + Actual Questions Analyzed (the why behind some answers)
- DONE – 0.25 hr – ~~LINK~~ – (4 Q's) Free Hadoop Exam (or purchase 86) – note, on 5th question, got antivirus security alert … so removed
- DONE – 1.00 hr – Googling study material on "A00-240", "A00-240 practice questions", "A00-240 Study Guides" + put findings below
- DONE – 0.15 hr – <u>LINK</u> – (5 Q's) YouTube add for Analytics Exam, had 5 Q&A's
- DONE – 0.75 hr – <u>LINK</u> – (12 Q's) Lead4Pass, Free Sample Questions (Q6=D not A, lot of research time for these 12 Q's)
- DONE – 1.50 hr – <u>LINK</u> – (25 Q's) IT Exams (25 Free, not all 99. Excellent. Q9 is wrong though, answer=A and C.)
- DONE – 0.75 hr – <u>LINK</u> – (45 Q's) ExamTopics (45 Free, and excellent. Remaining 55 would need to sign-up for free account)
- DONE – 0.25 hr – <u>LINK</u> – (15 Q's) CertLibrary (Free, just register for free login to get access to all 99 Q's)
- DONE – 4.25 hr – <u>LINK</u> – (722 Q's) Quizlet Terms Flashcards, A00-240 SAS Training Lesson 1-4
  …(Many redundant Q's in the 722, but practice them all – important: take time to Google new terms…time spent pays off well)
- DONE – 9.75 hr – <u>LINK</u> – (178 Q's) uCertify Flashcards
  …(lots of time spent Googling terms I didn't know to try and figure out answers and learn…made 2nd and 3rd attempts faster)
  Practice Exams: 15.75 hr (6d) – 15.75 hr Test Prep – 10/3 : 10/8 – 619 Q's
- DONE – 2.25 hr – <u>LINK</u> – (178 Q's) Three uCertify Practice Exams
- DONE – 0.25 hr – Request SAS Coupon to take exam
- DONE – 1.75 hr – <u>LINK</u> – (64 Q's) CertBus free Q's in PDF
- DONE – 3.25 hr – <u>LINK</u> – (99 Q's) - $35 - TheExamCerts.com
  …(do not buy…roughly 6 or 7 B.S. answers in here--bad, some questions not in uCertify of CertBus above)
- DONE – 5.75 hr – <u>LINK</u> – (220 Q's, 60 at a time…take 4-5 times) - $41 - AnalyticsExam (awesome! Lots of Q's not found elsewhere)
- DONE – 2.50 hr – <u>LINK</u> – (58Q's) Free SAS Practice Exam (Last, after exhausting everything above)

- **Final Exam:** 32.75 hr (9 d) – 32.75 hr Test Prep – 10/8:10/17 – 1,782 Q's
  - *Exam is multiple choice, with some questions asking for calculations and stored procedures (38% code based, 15% table/chart interpret., and 47% word based (stats or data science)*
  - DONE – 1.25 hr – Refresher thru existing Notes
  - DONE – 0.75 hr – Request Approval to take exam, get code so not pay $; Register for exam
  - DONE – 3.50 hr – <u>EXAM</u> – Cancelled Exam, Q36 of 60 when modem crashed, awaiting case # so can reschedule
    …I really dislike taking tests from home but all test centers either closed or booked for months due to Covid
  - DONE – 5.75 hr – Review all saved PDF's, etc. from prior studying

- DONE – 3.25 hr – Detailed Review of Exam Study Guide, deep dive on anything not know
  …stopped on pg. 2 of 6 – too slow going, minimal vlaue
- DONE – 1.75 hr – LINK1, LINK2 – (139 Q's) More Quizlet Flashcard for WGU748
- DONE – 0.25 hr – Call to get voucher reinstated, then re-schedule for Sat morning
- DONE – 14.25 hr – Re-review all practice test results
- DONE – 2.00 hr – EXAM – Take exam **A00-240**: Statistical Business Analyst
- **Cancelled:** 2.75hr
  - CANCELLED – 0.75 hr – Attempt to plan before course opened, and before email from course mentor
  - CANCELLED – 1.50 hr – LINK – Course #1 – Getting Started with SAS Visual Analytics – Could not start course yet, so just started taking these in case overlapped…stopped once got course mentor email with direction
  - CANCELLED – 0.00 hr – LINK – Course #2 – Data Analysis and Reporting in SAS Visual Analytics
  - CANCELLED – 0.00 hr – LINK – Course #3 – Using Data for Geographic Mapping and forecasting in SAS Visual Analytics
  - CANCELLED – 0.00 hr – LINK – Course #4 – Performing Network, Path, and Text Analysis in SAS Visual Analytics
  - CANCELLED – 0.00 hr – LINK – Course #5 – Creating Advanced Reports with SAS Visual Analytics
  - CANCELLED – 0.00 hr – LINK - Dr. Joni Shreve's book In WGU Library ($75, too much)
  - CANCELLED – 0.10 hr – LINK – Slack Channel
  - CANCELLED – 0.25 hr – LINK – Alan Elliot's SAS Stat Tutorials (focus on Data Analysis section 1/3 in)
  - CANCELLED – 0.00 hr – LINK – SAS Official Certification Prep Guide for Statistical Business Analysis ($75)
  - CANCELLED – 0.00 hr – LINK – YouTube StatQuest to refresh on Statistics (focus on ANOVA, linear regression, and logistic regression) – Youtube stalling for 30min, nothing working so cancelled
  - CANCELLED – 0.00 hr – LINK – (50 Q's) VCE Guide … too many images are not present, cannot understand nor answer question when critical parts are missing
  - CANCELLED – 0.25 hr – LINK – (65 Q's) Free-Online-Exams.com – Cancelled b/c missing too many images so cannot answer, and some warning about password intercepted when register

If this document was helpful, hit me up on social media at www.linkedin.com/in/mpierceAD576