The Infinite Actuary's Technical Skills Course (TSC) Syllabus

After completing the Technical Skills Course, you should be able to perform the following:

Actuarial Concepts applied using technical skills

- ✓ Use lookup functions against Pricing tables
- ✓ Hit a Target Loss Ratio with GOALSEEK
- ✓ Perform Data Analysis with Excel Pivot Tables, Access queries, SQL queries, and SAS queries
- ✓ Apply Conditional Tail Expectation with SQL in application to real earthquake data
- ✓ Develop an Inversion Simulation routine with Excel VBA to analyze spread of risk
- ✓ Predict survival using regression models within SAS
- ✓ Build a financial model in Excel and perform sensitivity analysis using data tables

Excel

- ✓ Perform data analysis with basic functions and conditional functions
- ✓ Perform data analysis with Pivot Tables
- ✓ Communicate key results with charts
- ✓ Learn to quickly look up values from a table
- ✓ Learn forecasting techniques with Goal seek and Solver
- ✓ Ability to use Fixed Cells and Named Ranges
- ✓ Learn to look up values efficiently with INDEXMATCH
- ✓ Create dynamic charts that get updated automatically when new values are entered
- ✓ Summarize totals from numerous tabs onto one single tab
- ✓ Calculate weighted averages
- ✓ Learn to parse data and store data into meaningful tables
- ✓ Apply logical functions to make decisions based on your data
- ✓ Learn to control user inputs and how to handle VLOOKUP errors
- ✓ Visualize patterns in your data fast with Conditional Formatting
- ✓ Make your data easily scrollable and learn how to audit complicated formulas

The Infinite Actuary's Technical Skills Course (TSC) Syllabus

Excel VBA

- ✓ Learn how to setup your workbook to enable VBA
- ✓ Record a macro using the Macro Recorder
- ✓ Program your own code to create your own routines
- ✓ Declare variables and learn how to assign values to a specific cell
- ✓ Learn how to use normal Excel Functions within your VBA code
- ✓ Using IF THEN ELSE within VBA
- ✓ Write a loop to perform simulations
- ✓ Debug your VBA code when it is not working correctly
- ✓ Writing your own Function and using it with Excel
- ✓ Engage the user with Buttons, MsgBox, and InputBox
- ✓ Turn off Screen Updating
- ✓ Apply best practices for coding including commenting and indenting

MS Access

- ✓ Import tables into MS Access
- ✓ View tables and look at the metadata
- ✓ Learn to filter a table to create a new table
- ✓ Create queries and run those queries
- ✓ Group data to find the sum, count, average, max, and min of a dataset
- ✓ Use a query to group data and filter using the WHERE clause to calculate conditional sums, averages, counts
- ✓ Merge tables with left, right, and inner joins
- ✓ Run a pivot table in Excel where the data lives in MS Access
- ✓ Use query criteria wildcards such as LIKE, IS NULL, *
- ✓ Create Pivot Charts views off query results

The Infinite Actuary's Technical Skills Course (TSC) Syllabus

SQL

- ✓ Learn about Select * and selecting other fields from a table
- ✓ Learn how to create a brand new table from a query
- ✓ Learn how to update values within a SQL query
- ✓ Learn to insert and delete rows from a SQL query
- ✓ Learn to perform a GROUP BY in SQL to get at sums, averages, and counts
- ✓ Learn to use the WHERE in SQL to get a conditional sums, averages, and counts
- ✓ Learn about ORDER BY to sort your data within a SQL query
- ✓ Learn about how to perform JOINS
- ✓ Utilize SQL in conjunction with MS Access databases
- ✓ Learn how to perform SQL within Microsoft Excel using Microsoft Query+

SAS

- ✓ Uploading your data into SAS
- ✓ Filter and sort your data
- ✓ Create new variables for analysis
- ✓ Add comments to your SAS code to make it more readable
- ✓ Using print commands to view your data
- ✓ Analyze your data using contents, frequency, and correlations
- ✓ Summarize your data using PROC Reports and Summary Statistics
- ✓ Learn to reorder your dataset
- ✓ Perform merges in SAS including left, right, and inner joins
- ✓ Learn to use SQL within SAS for code efficiency

The Infinite Actuary's Technical Skills Course (TSC) Syllabus

R

- ✓ Gain foundational knowledge in R to prepare for the SOA/CAS preliminary exams
- ✓ Run scripts in base R and R Studio
- ✓ Make distinctions between the various data types in R
- ✓ Perform various vector operations
- ✓ Create matrices to perform financial analysis
- ✓ Load data into R using data frames
- ✓ Visualize your data using GGPLOT2
- ✓ Create predictive models in R