The following syllabus is provided by The Institutes for

CAS DISC DA – Introduction to Data and Analytics
CAS DISC DA – Introduction to Data and Analytics

Course Syllabus

1. Planning an Insurer Data Modeling Project
   a. Harnessing the Power of Data
   b. Applying Data Quality Principles
   c. Documenting Data
   d. Data Classifications

2. Collecting Data for Insurer Models
   a. Insurer Operational Data
   b. Statistical Plans
   c. External Data Sources

3. Preparing Data for Analysis
   a. Managing Dataframes
   b. Querying Data
   c. Joining Data Tables
   d. Indexes, Null Values, and User-Defined Functions
   e. Extracting Data from Online Sources and Data Marts
   f. Testing Data

4. Working With Different Types of Data
   a. Working with Structured Data
   b. Working with Unstructured Data
   c. Addressing Common Data Issues

5. Analyzing Data With Visualizations
   a. Planning an Effective Data Exploration
   b. Data Exploration Fundamentals
   c. Fundamentals of Exploratory Data Visualizations
   d. Creating Plots

6. Presenting Data Effectively
   a. Keys to Effective Presentation Visualizations
   b. Selecting the Right Presentation Visualization
   c. Maximizing a Presentation Visualization’s Effectiveness
7. Understanding Fundamental Modeling Concepts
   a. Basic Data Modeling Techniques
   b. Similarity and Distance in Data Modeling
   c. Predictive Model Training and Evaluation

8. Basic Data Analysis
   a. Traditional Data Analysis
   b. Analyzing Data with Classification Trees
   c. Analyzing Data with Linear Functions
   d. Segmenting Data with Cluster Analysis

9. Preparing Data for Insurance Applications
   a. Preparing Data for Insurance Applications Using SQL
   b. Creating Datasets for Claims Models
   c. Creating Datasets for Underwriting Models

10. Ethical and Societal Considerations of Data Analytics
    a. Using Data Ethically
    b. How Regulations and Professional Codes Affect Data Modeling
    c. Applying Ethics Checklists to Insurance Data Modeling
    d. Societal Impact of Credit-Based Insurance Scores