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Skills Enhancement on Fundamentals of Actuarial Science

Course Overview:

Actuarial Science deals with evaluating risks and maintaining the economic stability of insurance or financial organizations. Actuaries analyze past data and use that information to determine how much money should be set aside to cover the financial losses, which could occur in the future.

This course has been carefully designed for trainees from a wide variety of backgrounds. Even if you do not have any background in, for example, calculus, the course has been designed so you can skip over these sections without affecting your understanding of the rest of the course.

You will experience “hands-on” learning using Excel (or an equivalent spreadsheet tool) to project and investigate the financial condition of a company choosing appropriate strategies for the company through the use of simulations.

Course Objectives:

At the end of this course, the participants will be able to:

- Have familiarity with several of the technical tools, computer languages, or software packages used by actuaries.
- Learn how actuarial science applies mathematical and statistical methods to assess risk in these industries and other professions.
- Experience “hands-on” learning using Excel (or an equivalent spreadsheet tool) to project.
- Develop communication, leadership, and teamwork skills, and understand their importance in the actuarial industry.
- Analyze actuarial data using advanced statistical techniques;

Course Coverage:

Topic 1: Valuing Cash Flows:

- Time Value of Money
- Present Value
- Accumulated Value
- Valuing Multiple Regular Payments

Topic 2: Applications of Valuing Cash Flows:

- Equations of Value
- Example – Annuity Certain
- Application in Spreadsheets

Topic 3: Analysis of State Transitions:

- Introduction to State Transitions
- Two-State Model (Active/Dead)
- Calculating Probabilities using the Two-State Model

Topic 4: The Life Table:

- Introduction to the Life Table
- Calculating Probabilities using the Life Table

Topic 5: Valuing Uncertain Cash Flows:

- Expected Present Value
- Accumulated Value and Uncertainty

Topic 6: Modelling a Life Insurance Company:

- The Life Insurance Company Scenario
- A Single Projection
- Analyzing the Simulation Output
- Reserves
- Adjustments to Reserves
- Additional Scenarios

Targeted Groups:

- Business Professionals
- Business Analysts
- Data Analysts
- Research Analysts
- Finance Professionals
