



Actuarial Science Foundations Training Course

20 – 24 December 2026
Toronto

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Ref: 1218_189990 **Date:** 20 – 24 December 2026 **Location:** Toronto **Fees:** 12000 Euro

Overview

Actuarial Science Foundations Training Course is a one-week course for junior actuarial analysts, insurance professionals, risk analysts, finance analysts, and staff entering actuarial work who leave with an Actuarial Analysis Workbook. The course connects actuarial probability models, financial mathematics, survival analysis, insurance pricing, reserve estimation, data quality, model assumptions, model governance, and actuarial communication through applied insurance and pension cases. Agile Leaders Training Center presents actuarial science foundations for professional practice.

Who Should Attend

- Actuarial functions responsible for data preparation, assumptions, calculations, and result checks
- Insurance functions responsible for product pricing, claims trends, reserves, and portfolio monitoring
- Risk functions responsible for quantifying uncertainty and interpreting model outputs
- Finance functions responsible for cash-flow valuation and financial impact analysis
- Data functions responsible for supplying reliable inputs to actuarial models
- Governance functions responsible for model documentation, review, and decision support

The course assumes participants work with numerical information, insurance or financial processes, or analytical reports and leaves out advanced professional exam preparation, specialist stochastic modelling, and enterprise-wide risk frameworks.

Departments and Industries

The course supports actuarial science foundations across:

- Actuarial, finance, risk, and data departments in insurance organizations
- Pricing, reserving, underwriting, and claims-analysis functions
- Pension, employee-benefit, and long-term savings organizations
- Healthcare financing and managed-care organizations
- Consulting, audit-support, and financial-service teams

Learning Objectives

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



- Apply probability and statistical measures to insurance observations
- Use time value of money methods for cash-flow valuation
- Analyze survival and contingency patterns in benefit calculations
- Build basic premium and reserve estimates from stated assumptions
- Diagnose data-quality and model-assumption weaknesses
- Evaluate model governance records and communicate actuarial results

Course Agenda

Day 1: Actuarial Practice and Probability

- Actuarial Control Cycle Context Map
- Risk Pooling and Portfolio Classification Method
- Probability Distribution Selection Grid
- Expected Value and Variance Calculation Sheet
- Insurance Observation Summary Template

Day 2: Financial Mathematics and Cash Flows

- Time Value of Money Calculation Framework
- Interest and Discount Rate Conversion Table
- Cash-Flow Timeline Valuation Method
- Annuity and Loan Valuation Worksheet
- Asset and Liability Cash-Flow Comparison

Day 3: Survival and Contingency Concepts

- Survival Function Interpretation Guide
- Life Table Reading and Check Method
- Hazard and Mortality Rate Comparison
- Contingent Benefit Cash-Flow Model
- Assumption Sensitivity Test Matrix

Day 4: Pricing, Reserving, and Model Governance

- Risk Premium Component Build-Up
- Basic Reserve Estimation Worksheet
- Experience Versus Assumption Comparison
- Actuarial Data Quality Checklist
- Model Governance and Documentation Record



Day 5: Actuarial Analysis Practice

- Exercise: Classify Risks and Select Probability Measures
- Exercise: Value an Insurance Cash-Flow Stream
- Exercise: Interpret a Survival and Benefit Case
- Exercise: Review Pricing, Reserve, and Governance Evidence
- Capstone Exercise: Actuarial Analysis Workbook

Practical Exercises

The course uses suggested activities to practice actuarial analysis:

- Suggested activity: summarize claim observations and select probability measures for a motor insurance case
- Suggested activity: value benefit cash flows and compare assumptions for a pension case
- Suggested activity: prepare a basic premium and reserve estimate for a health insurance case
- Suggested activity: present model limitations and results to a finance decision group

FAQs

Who does actuarial science foundations training suit, and what does it assume?

Actuarial science foundations training suits early-career analysts and insurance, finance, risk, and data professionals who work with numerical information and assumes basic spreadsheet confidence rather than prior actuarial qualification.

How does actuarial science foundations training differ from actuarial exam preparation?

Actuarial science foundations training develops applied workplace methods, artifacts, governance, and communication, while actuarial exam preparation follows a specific professional syllabus and develops deeper mathematical techniques for formal assessment.

What is the actuarial control cycle used for?

The actuarial control cycle is used to define a problem, design and implement a solution, monitor actual experience, and revise assumptions or methods when evidence changes.

How are premiums and reserves different in actuarial work?

Premiums estimate the price required to cover expected claims, expenses, uncertainty, and other stated components, while reserves estimate obligations arising from coverage already provided or events already incurred.



Why do actuarial models need governance and communication?

Actuarial models need governance and communication so assumptions, data sources, limitations, reviews, results, and decisions remain traceable and understandable to authorized users.

Conclusion

Participants take back an Actuarial Analysis Workbook containing probability measures, cash-flow valuations, survival interpretations, premium and reserve estimates, data checks, assumption tests, governance records, and a results brief. The workbook changes disconnected calculations into a documented analysis path. It supports reviewable assumptions, consistent checks, and clearer actuarial communication.