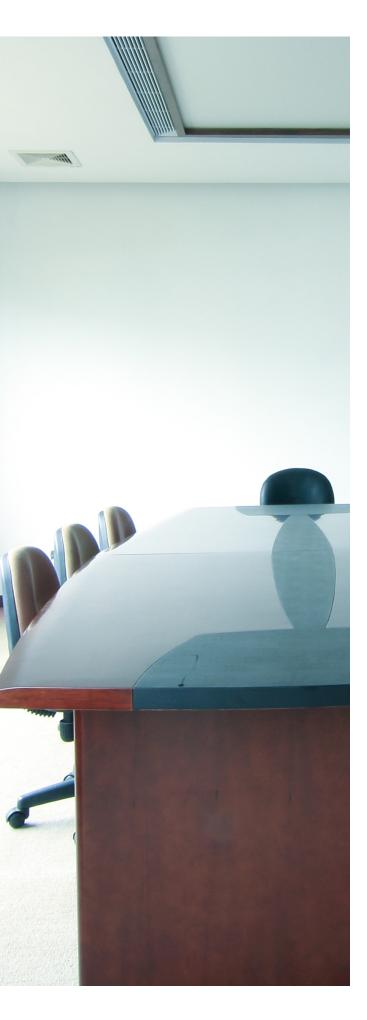# Reacfin Academy

TRAINING OFFER

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About
Reacfin
Academy

A specialized learning platform for the Financial Industry

Reacfin Academy is the business line of Reacfin s.a./n.v. dedicated to professional continuous education in Risk, Finance, Actuarial Science, Data Science and the Management of Financial Institutions.

We offer a unique mix of academic expertise & pedagogy and real-life practitioners' experience.

Many in our staff indeed combine their professional career with lectures on Finance, Risk & Portfolio management, Data Science or Actuarial Science in highly reputed universities.

We focus on serving exclusively Financial Institutions, Public Bodies and Large Corporates.

As a result we propose comprehensive & hands-on training designed to be directly useable and deliver short-term measurable value.

We typically propose tailored solutions where our professional education courses are adapted to the specificity of your firm.

All of our training can be assorted with exams and certifications.

This catalogue contains topics directly available for training purposes.

Table Of **Contents**

All topics listed below are available as guided trainings, while some of them are also available in self-learning (e-learning modules or jupyter notebooks).
Do not hesitate to contact us for more information on these topics.

Insurance

BASICS OF INSURANCE	
Functioning of an insurance company	
Insurance economic concepts and principles	Main activities of an insurance company
Insurance contracts - definition and classification	The components of an insurance premium
Non-Life	
Non-life insurance products and regulation	Non-life premiums and premium provisions
Claims and claims provisions	Balance sheet and P&L in non-life
Life	
Life insurance products and regulation	Life pricing and mortality tables
Life provisions	Balance sheet and P&L in life
Health	
Health insurance products and regulation	Health insurance pricing and provisioning
Worker's compensation legal framework	
ALM and Finance	
Main principles of asset and liability management in an insurance company	Risk mitigation and reinsurance
Performance indicators	
Profitability indicators	Solvency and value

INSURANCE REGULATION	
Solvency 2	
Solvency 2 in a nutshell	Economic balance sheet & valuation principles
Market and counterparty risks	Life and health risks
Non-life risks	SCR calculation
Pillar 2 and ORSA	Pillar 3 - Disclosure
IFRS17	
IFRS17 in a nutshell	Methodologis (BBA, VFA, PAA)
QUANTITATIVE NON−LIFE INSURANCE	
Pricing & Underwriting	
Pricing & Data Science overview	Frequency and severity with GLM or GAM
Experience rating (credibility and bonus-malus)	Machine Learning applications to non-life pricing
Competition analysis & policyholder behavior	Profitability analysis
Reserving	
Deterministic models (Chain ladder & Bornhuetter-Ferguson)	Stochastics models (Mack, Bootstrap, GLM,...
Best estimate in non-life insurance	Best estimate of reinsurance in non-life insurance

QUANTITATIVE LIFE INSURANCE	
Pricing	
Pricing of classical life products	Life tables (periodic, prospective, experience)
Reserving	
Market consistent valuation of life insurance contracts	Profit sharing schemes
Best estimate in life insurance	Lapse modelling
Embedded options in life insurance contracts	Embedded value

QUANTITATIVE HEALTH INSURANCE	
Pricing	
Annuities (Worker's compensation): fair value versus legal valuation	Multi-state pricing
Worker's compensation pricing with GLMM	Disability pricing
Reserving	
Worker's compensation legal provisions	Multi-state reserving
Best estimate in health insurance	Management actions

Banking & Asset management

BUSINESS LINES	
What is a bank	Overview of the banking market

Retail banking	
Undivided loans	The modelling of None-Maturing Deposits
Residential Mortgages (with a focus on Belgian mortgages)	Structured products

Corporate banking	
Corporate loans	Machine Learning techniques to model Credit Risks on loan books

Trading and investment banking	
Interest Rate derivatives	Modelling and calibrating IR Implied volatility surfaces
Credit Derivatives	Equity Derivatives
Monte-Carlo simulations under Risk Neutral assumption for Pricing purposes	Securitization
CDO's and synthetic securitization	Collateral management

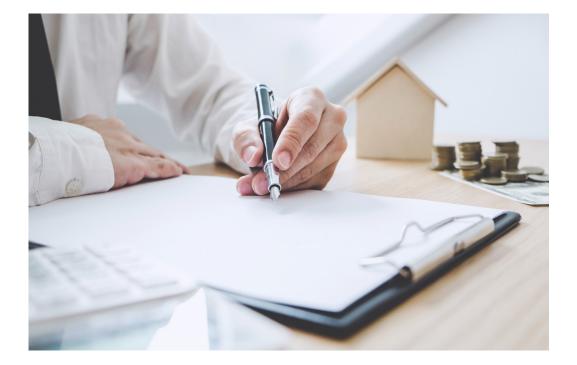| Asset management	
What is an investment fund?	Strategic and Tactical Asset Allocation
Measuring and allocating Risk & Performance of investment vehicles	Monte-Carlo simulations under Real World assumption for Pricing pupuses

FINANCE AND BALANCE SHEET MANAGEMENT	
ALM and Treasury	
ALM and IRRBB management for banks	Validation of ALM and IRRBB models and processes
Treasury and Liquidity Risk Management for Banks	ILAAP - Introduction and market practices
Credit Portfolio Management	
Credit Portfolio Management practices of banks	ICAAP - Introduction and market practices
Capital Management	
Overview of the Basel Accords and of CRR/CRD	

RISK MANAGEMENT	
Risk Measurement	
Climate risk assessment for banks	Measuring, monitoring and mitigating Interest Rate Risk
Measuring, monitoring and mitigating Liquidity Risk	Risk Management for Belgian and Dutch Residential Mortgage portfolios

Risk & Finance

QUANTITATIVE RISK & FINANCE	
Principles of discounting and capitalization	Risk neutral valuation & risk measures
Stochastic processes (Black and Scholes)	Stochastic simulation and Economic Scenario Generator
Derivatives pricing	Dependency structures: Copulas
Interest rate and inflation modelling	Credit spread models
Equities models	Real estate modelling
Management of Credit and Counterparty Risk	Market Risk Mitigation and hedging
Enterprise Risk Management	Risk Apetite Framework and their development
Climate risk (transition risk and physical risk)	

ALM	
Overview financial products (bonds, equities, mutual funds,…)	ALM techniques (balance sheet immunization, replicating portfolios,…)
Balance sheet projection	Strategic asset allocation
Portfolio management	Liquidity Management for Financial Institutions

Data Analytics

DATA CULTURE	
Data awareness (main principles about data, data preparation, data governance, GDPR)	Data Techniques (Data analytics and statistics, machine learning, open data, text mining, web scraping, visualization,…)
Emergence of new technologies and new waves in insurance	Data security

STATISTICS	
Discrete and continuous probility distributions	Mathematical optimization
Monte Carlo methods and bootstrapping	Exploratory Data Analysis
Generalized Linear Models (GLM)	Generalized Additive Models (GAM)
Regularization techniques	Generalized Linear Mixed Models (GLMM)

MACHINE LEARNING	
Coding & BI	
R programming	Python programming
Data preparation pipeline (in Python)	Data Visualization
Algorithms	
Supervised Machine Learning: Tree-based models (CART, random forest, bagging)	Supervised Machine Learning: Gradient boosted methods
Supervised Machine Learning: Neural networks	Unsupervised learning: K-means, NN,...
Model tuning and cross-validation	Interpretability of Machine Learning methods

Contact us

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