

EAA Certificate in Actuarial Data Science

Learning Objectives

Actuarial Data Science Basic

(bold = module, unbold = building block)

Basics & environment

Basics

Digitalisation

Social environment & ethics 1

Data protection 1

Information Technology

Data Management 1

Data processing technologies 1

Information processing in insurance companies

Insurance Analytics

Data Mining 1

Analytics 1

Mathematics / Statistics

Supervised Learning 1

Unsupervised Learning 1

Deep Learning 1

Tools & Programmes

Introduction and overview

Cross-language data science tools

Programming languages for data science

Use Cases

Actuarial Data Science Advanced

Basics & environment

- Social environment & ethics 2
- Data protection 2

Information Technology

- Data Management 2

Insurance Analytics

- Data Mining 2
- Analytics 2
- Visualisation 1
- Innovative products 1

Mathematics / Statistics

- Supervised Learning 2
- Deep Learning 2
- Correlation & Causal Inference
- Data preparation for modelling

Tools & Programmes

- Programming languages for data science

Use Cases

Actuarial Data Science Immersion

Information Technology

Data processing technologies 2
Fundamentals of information theory
System architectures

Insurance Analytics

Data Mining 3
Visualisation 2
Innovative products 2

Mathematics / Statistics

Unsupervised Learning 2
Deep Learning 3
Anonymisation / Pseudonymisation 1
Model selection & regularisation

Tools & Programmes

Big Data Analytics

Use Cases

Actuarial Data Science Completion

Information Technology

- Coding theory
- Cloud computing
- Development methods

Insurance Analytics

- Anomaly Detection
- Interpretation (of models and results)

Mathematics / Statistics

- Deep Learning 4
- Anonymisation / Pseudonymisation 2
- Quantum computing

Use Cases