

Invitation to a Course on Advanced Statistical Methods in Insurance

1st to 4th October 2008
Salzburg University

- Lecturers:** Prof. Dr. Marcus Hudec
Department of Scientific Computing, Vienna University
Director of Data Technology, Vienna
Visiting professor at Salzburg University
- Dr. Michael Schlögl
Head of Motor Insurance Department
Member of the Extended Management Board
Wiener Städtische Versicherung AG – Vienna Insurance Group, Vienna
Visiting professor at Salzburg University
- Dates:** Wed. 1st Oct. 9.00–13.00 and 14.30–18.00
Thur. 2nd Oct. 9.00–13.00 and 14.30–18.00
Fri. 3rd Oct. 9.00–13.00 and 14.30–16.30 (19.00 concert and reception)
Sat. 4th Oct. 9.00–12.00
- Contents:** The course covers all aspects of advanced statistical methods in insurance required to become a fully qualified actuary according to the core syllabus of the International Actuarial Association and the core syllabus of Groupe Consultatif, according to the regulations of the Actuarial Association of Austria (AVÖ), as well as according to the regulations of the German Actuarial Association (DAV). For continuing professional development (CPD) the course counts as 21 hours. The methods and models will be illustrated by specific applications (premium calculation and reserving, optimizing cross-selling and up-selling campaigns in insurance marketing). The emphasis will be on a practical and data oriented approach. The course is suited to all those who want to acquire knowledge of advanced statistical methods in insurance. It is also of interest to experienced practitioners. Basic stochastic knowledge is required. Please find the structure of the course below.
- Course fees:** €796. The course fees cover the 4 overnight accommodations from Tuesday to Saturday in the Castellani Parkhotel including breakfast. The fees for participants who do not need accommodation are €480. Lunches and coffee breaks are included in the fees as well as the concert and the reception on Friday evening.
- Information:** For further information, please contact Sarah Lederer by fax (+43 662 8044 155) or e-mail (sarah.lederer@sbg.ac.at) with your telephone number. Your questions will be answered as soon as possible.

Registration: Please send the attached registration form by post or fax it to +43 662 8044 155, and arrange for the amount to be transferred (at no cost to the recipient) to the following account before 29th August 2008. After this date registration with hotel accommodation is only possible upon request. The registration and payment deadline for participants who do not need accommodation is 12th September 2008.

Salzburg Institute of Actuarial Studies (SIAS)
IBAN: AT 792 040 400 000 012 021 BIC: SBGSAT2S

Location: Lecture Hall 402 in the Faculty of Science
A-5020 Salzburg, Hellbrunner Straße 34
The concert and the reception on Friday evening will be held in the historic Max-Gandolph-Library in the centre of Salzburg's Old Town.

Course Structure

Part I: Advanced statistical methods for premium calculation and reserving

1. Smoothing techniques

Insurance principle, smoothing of raw data, premium calculation in the case of multiple classification

2. General linear model

Simple and multiple regression, analysis of variance and covariance, modelling of nonlinearities

3. Alternative approaches

Robust regression models, ridge regression, weighted least squares

4. Generalized linear model

Structure of models, logistic regression, log-linear models

5. Credibility models

Credibility approach due to Bühlmann-Straub

6. Monte Carlo simulation

Simulation of random variables, bootstrapping, simulation of stochastic processes

7. Multivariate data

Visualization, principal component analysis, linear discriminant analysis according to Fisher

Part II: Data mining concepts for the optimization of cross-selling and up-selling campaigns in insurance marketing

1. Data mining process

CRISP-DM, evaluation of models and overfitting

2. Regression

Regression trees, neural networks

3. Supervised learning (classification)

Classification trees, support vector machines, neural networks

4. Unsupervised learning (clustering)

Hierarchical methods, k-means, mixture models