

**УДРУЖЕЊЕ АКТУАРА РЕПУБЛИКЕ СРПСКЕ  
У САРАДЊИ СА  
АГЕНЦИЈОМ ЗА ОСИГУРАЊЕ РЕПУБЛИКЕ СРПСКЕ И  
МЕЂУНАРОДНИМ УДРУЖЕЊЕМ АКТУАРА**

pozivaju Vas na specijalistički seminar

**PRAKTIČNI PRISTUP METODOLOGIJI FORMIRANJA TARIFA  
OSIGURANJA**

**Vrijeme održavanja | Četvrtak i petak, 19. i 20. mart 2015.**

**Mjesto održavanja | Hotel Talija Banja Luka**

**Predavač | Nasser Hadidi, Ph.D., FCAS, FSA, MAAA**

**Jezik seminara | Engleski**

**Trajanje | 16 nastavnih sati**

**Rok za prijavu | 12. mart 2015.**

**Naknada za učestvovanje | 300,00 KM (155,00 EUR)** (cijena je sa uračunatim PDV-om)

U naknadu je uključena literatura koja pokriva program, popis učesnika seminara sa kontakt podacima, potvrda o pohađanju stručnog usavršavanja, ručak, druženje uz večeru i osvježenje u pauzama.

**Informacije i prijave |**

- [predrag.kovacevic@ymail.com](mailto:predrag.kovacevic@ymail.com)
- 065/617-491
- [www.uars.rs.ba](http://www.uars.rs.ba)

## RATEMAKING METHODOLOGY AND RELATED ISSUES IN A PRACTICAL HANDS-ON APPROACH

**Thursday and Friday, March 19-20, 2015, Hotel Talija Banja Luka,**

SCHEDULE	
<b>THURSDAY, 19.03.2015</b>	
08:30 – 09:00	Registration
09:00 – 10:30	Insurance as a Unique Business
10:30 – 10:45	Coffee break
10:45 – 12:15	Rating Making, Key Concepts
12:15 – 13:15	Lunch
13:15 – 14:45	Rating Making, Additional Issues
14:45 – 15:00	Coffee break
15:00 – 16:30	Generalized Linear Models
16:30 -	Informal Question / Answer Session
<b>FRIDAY, 20.03.2015</b>	
09:00 – 10:30	Risk Classification using Decision Trees
10:30 – 10:45	Coffee break
10:45 – 12:15	Credibility
12:15 – 13:15	Lunch
13:15 – 14:45	End Product of an Actuarial Data Analysis Project
14:45 – 15:00	Coffee break
15:00 – 16:30	Professionalism
16:30 -	Informal Question / Answer Session

## Program seminara - Syllabus

The overall objective of this two day seminar is to present ratemaking methodology and related issues in a practical hands-on approach. The implementation of all issues discussed will be demonstrated with Excel and the two software packages SPSS and R.

March 19, 2015

Session 1, 9:00 – 10:30

### **Insurance as a Unique Business**

As a business, insurance is unique in that the costs of marketed products are unknown when the products are sold. Thus, over many years actuaries have developed a set of procedures for estimating the price of such products. Essential elements of these procedures will be covered in this introductory session.

Session 2, 10:45 – 12:15

### **Rating Making, Key Concepts**

Key concepts of ratemaking - Frequency, Severity, Exposure, Premium, Claims, Loss, Loss Adjustment Expense, etc. - will be covered in this session. Rating variables for various types of insurance, in particular personal and commercial auto, and related exposures will be discussed. Aggregation methods and deductible/limit related issues will be presented both theoretically and in practice.

Session3, 1:15 – 2:45

### **Rating Making, Additional Issues**

Loss data aggregation, Calendar, Accident and Report year, Loss development factor and triangles, various methods of estimation of unpaid claims – both deterministic and stochastic, overall indications, loss ratio and pure premium methods, and risk classification will be covered in this session.

Session 4, 3:00 – 4:30

### **Generalized Linear Models**

The GLM methodology as a generalization of the familiar classical normal regression models will be covered somewhat extensively. Both the theory underpinning this classification procedure and its implementation, with data actuaries are likely to observe in practice, will be covered. Poisson and Gamma regression models, with explanatory variables, will be demonstrated as special cases.

### **Informal Question / Answer Session, 4:30 -**

March 20, 2015

Session 5, 9:00 – 10:30

### **Risk Classification using Decision Trees**

Data mining procedures such as 'Classification And Regression Trees (CART)' and 'Automatic Interaction Detection (AID)' are quite useful for risk classification. An early version of such methods, 'Chi-square Automatic Interaction Detection (CHAID)' is the easiest to implement and will be demonstrated in this session.

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Session 6, 10:45 – 12:15

**Credibility**

This session is devoted to credibility procedures which are of utmost importance in actuarial science. Classical, Buhlmann and Bayesian credibility procedures will be presented as best time allows. The Poisson/Gamma and Binomial/Beta models will be discussed as special cases.

Session 7, 1:15 – 2:45

**End Product of an Actuarial Data Analysis Project**

This session is intended to familiarize the audience with a typical actuarial data analysis consulting project, and how the results should be communicated to clients or managers. Actual observed liability data would be used to estimate the required statistics, discussed in prior sessions.

Session 8, 3:00 – 4:30

**Professionalism**

The code of professional conduct promulgated by the American Academy of Actuaries will be presented and discussed, as an exemplary document.

**Informal Question / Answer Session 4:30 -**

## Predavač - Lecturer

**Nasser Hadidi, Ph.D., FCAS, FSA, MAAA**

### Presently

#### Professor (tenured)

Department of Mathematics, Statistics and Computer Science  
University of Wisconsin-Stout  
Menomonie, Wisconsin 54751  
Tel. 715 232 2243  
Hadidin@uwstout.edu

### Also

#### President and Chief Actuary (Sole Proprietor)

Wisconsin Actuarial Consultants <http://wisconsinactuarial.com/>  
N8316, 627th Street  
Colfax, Wisconsin 54730  
Tel. 715 235 8822  
nhadi@wisconsinactuarial.com

### Education

#### B. Sc. (Statistics) 1965

American University of Beirut, Beirut, Lebanon

#### Ph. D. (Statistics) 1968

Virginia Polytechnic Institute and State  
University

#### Post Doctorate Studies 1969

University of Oslo, Oslo, Norway

#### Member American Academy of Actuaries (MAAA) 1997

#### Fellow Casualty Actuarial Society (FCAS) 2001

#### Fellow Society of Actuaries (FSA) 2013

### Professional Experience

Since earning the Ph. D. degree, he has continuously been active in teaching, research, professional development, consulting, and university administration.

### University of Wisconsin – Stout

Professor (tenured) (Statistics) 1983-Present  
Associate Professor (Statistics) 1980-1982

### Chinese University of Hong Kong

Visiting Scholar January 1, 2010 – June 1, 2010

On Sabbatical Leave from University of Wisconsin - Stout

### **University of Nations, Yinchuan, China**

Visiting Scholar June 2, 2012 – June 12, 2012

Invited Lectures

### **The St. Paul Companies**

Senior Operations Research Consultant 1984-1989 Concurrent with the University Position

### **Pahlavi University - Shiraz**

Dean, College of Arts and Sciences 1975-1978

Professor (tenured) (Statistics) 1975-1978

Deputy Dean, College of Arts and Sciences 1971-1974

Associate Professor 1971-1974

Acting Chair, Mathematics and Statistics 1970-1971

Assistant Professor 1969-1970

Published numerous publications and reviews for Mathematical Reviews, and Bulletin of American Mathematical Society, and abstracts of Presentations at Professional Meetings are extensive and not listed. In addition, he has authored numerous articles in connection with consulting projects, which are unpublished due to their proprietary nature. A sample of projects completed for clients is listed below:

- Loss reserve evaluation, especially for captives, self insurance funds and risk retention groups
- Excess of loss insurance, forecasting losses within layer, retention analysis and evaluation of various reinsurance options
- Actuarial services for captive insurance companies
- Loss transfers and reinsurance, determination of ceding premium
- Workers compensation loss forecasts
- General, professional and product liability loss forecasts
- Ratemaking, especially implementing cutting-edge methodologies
- Mathematical modeling as a means of quantify and evaluating various insurance programs
- Advanced data analysis in support of actuarial studies

### **Voluntary Professional Contributions**

Currently he serves as the chairperson of the joint SOA/CAS Exam 4/C committee.

He has served on numerous other CAS committees in particular chairperson of Syllabus committee 2007-2010. For a complete list of his contributions to CAS, search my name at [www.casact.org](http://www.casact.org)

He served the Midwestern Actuarial Forum in the capacities of Education Officer 2003-2005, Vice President 2005-2006 and President 2006-2007.