

STA4510H1F Insurance Risk Models II Fall 2013

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Office hours: Tuesdays 10-11am, 2pm-4pm, or by appointment.
Class Times and Location: Wednesdays 6:10pm-9:00pm, Oct 16 to Nov 27;
SS1083.

Topics to be covered

Week 1: Poisson and Compound Poisson Processes, Classical Compound Poisson Risk Model, Net Profit Condition, Time of Ruin, Infinite Ruin Probability, Associated Integro-Differential Equation.

Week 2: Lundberg Equation, Adjustment Coefficient Associated Defective Renewal and Proper Renewal Equation, Cramer-Lundberg Inequality, Key Renewal Theorem, Asymptotic Behaviour of the Probability of Ruin

Week 3: Compound Geometric Representation, Ruin Probability Calculations (Combination of Exponentials, Mixture of Erlang, Phase-Type), Deficit and Surplus, Maximal Loss, Discounted Penalty Function.

Week 4: Associated Defective Renewal Equation for Penalty Function, Moments of Surplus Prior to Ruin and Deficit at Ruin, Compound Poisson Risk Model with Diffusion, Risk Models with Dividend.

Weeks 5-6: Student Presentations on Projects.