

Advanced Risk Theory

MAST 729C(878)/2, 01

Schedule: Monday 10:15–11:30 and Wednesday 10:15–11:30, in AD-410, Loyola Campus.

Instructor: Qi-He Tang

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- Office Hours: Tuesday 13:30–15:00 and Thursday 13:30–15:00, or by appointment.

Outline:

This course gives an introduction to classical and modern insurance risk models (such as the compound Poisson model, the Sparre Andersen model, the Markov model, and some diffusion models) and applies them to some common problems of interest in risk theory (such as ruin theory).

Main References:

- Rolski, T.; Schmidli, H.; Schmidt, V.; Teugels, J. Stochastic Processes for Insurance and Finance. John Wiley & Sons, Ltd., Chichester, 1999.
- Bowers, N. L.; Gerber, H. U.; Hickman, J. C.; Jones, D. A.; Nesbitt, C. J. Actuarial Mathematics, 2nd Edition, 1997.
- Klugman, S. A.; Panjer, H. H.; Willmot, G. E. Loss Models. John Wiley & Sons, Inc., New York, 1998.
- Embrechts, P.; Klüppelberg, C.; Mikosch, T. Modelling Extremal Events for Insurance and Finance. Springer-Verlag, Berlin, 1997.

Course Evaluation:

- 4 assignments counting for 20% ($= 4 \times 5\%$),
- a mid-term examination counting for 40%, and
- a final project (presentation + summary + ideas) counting for the remaining 40% ($= 20\% + 15\% + 5\%$).