Quantitative Modelling of Operational Risk and Insurance Analytics (STAT0020)

**Description**

This module aims to develop a core mathematical and statistical understanding of an important new emerging area of risk modelling known as Operational Risk which arose from the development of the Basel II/III banking regulatory accords. This will equip students with the necessary tools to undertake core modelling activities required in risk management, capital management and quantitative modelling in modern financial institutions. It is primarily intended for third and fourth year undergraduate students and taught postgraduate students registered on the degree programmes offered by the Department of Statistical Science, or jointly with other departments.

On successful completion of the module, a student should be able to: describe the key quantitative requirements of the Basel II/III banking accord; describe the 56 risk cells (business units and risk types) required under the standard Basel II/III regulator frameworks; describe the basic indicator, standardized and advanced measurement approaches; describe the key components of a loss distributional approach model; develop frequency and heavy tailed severity models for Operational risk types including estimation or the model parameters and model selection; describe properties and asymptotic estimators for risk measures that are required for capital calculation; describe the coherent allocation of capital to business units from the institutional level; introduce and understand the influence of dependence modelling within an LDA model structure; obtain familiarity with particular classes of copula statistical models of basic relevance to practical Operational risk modelling; decide upon appropriate combining approaches for different sources of data required by regulation to be considered in OpRisk settings; develop loss aggregation methods to aggregate OpRisk loss processes.

**Key information**

- **Year**: 2019/20
- **Credit value**: 15 (150 study hours)
- **Delivery**: UG L6, Campus-based
- **Reading List**: View on UCL website
- **Tutor**: Dr Niloufar Abourashchi
- **Term**: Term 2
- **Timetable**: View on UCL website

**Assessment**

- Written examination (main exam period): 90%
- Coursework: 10%

**Find out more**

For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk
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Key information
- Year: 2019/20
- Credit value: 15 (150 study hours)
- Delivery: PGT L7, Campus-based
- Reading List: View on UCL website
- Tutor: Dr Niloufar Abourashchi
- Term: Term 2
- Timetable: View on UCL website

Assessment
- Written examination (main exam period): 90%
- Coursework: 10%

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Key information
- Year: 2019/20
- Credit value: 15 (150 study hours)
- Delivery: UGM L7, Campus-based
- Reading List: View on UCL website
- Tutor: Dr Niloufar Abourashchi
- Term: Term 2
- Timetable: View on UCL website

Assessment
- Written examination (main exam period): 90%
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