F71SR Research and Industry Topics

COURSE DETAILS
Course Code: F71SR
Full Course Title: Research and Industry Topics
SCQF Level: 11
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: No
Postgraduate Taught: Yes
Postgraduate Research: No

Additional Information:

COURSE AIMS
The aim of this course is to provide students with experience of recent developments in quantitative financial mathematics, in the practice of risk management and in various mathematical aspects of stochastic modelling and data science.

LEARNING OUTCOMES – SUBJECT MASTERY
On completion of this course the student should be able to:
• read one or more research papers for each Research and Industry Topics subject
• show detailed and critical understanding of selected recent developments in the topics they chose
• demonstrate expertise in applying a variety of techniques learnt from research papers in the context of relevant problems

LEARNING OUTCOMES – PERSONAL ABILITIES
At the end of the course students should be able to:

• be able to write a coherent essay on each of two topics in a way that demonstrates they have understood the material
• present effectively their results in a way that demonstrates they have understood the relevant research papers and that they have accurately performed any numerical calculations
• demonstrate the ability to learn independently
• demonstrate skills in the understanding and processing of numerical information and interpretation of statistics
• show an appreciation of the interface between academic theory and industrial practice

At the end of the course students should be able to:

• demonstrate the ability to learn independently and as part of a group
• manage time, work to deadlines and prioritise workloads

At the end of the course students should be able to:
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- perform numerical calculations using a suitable computer language or package as required for individual topics

SYLLABUS

At the heart of the Research and Industry Topics are four equally weighted guided reading projects. Two projects will be undertaken in the first half of the semester and examined midway through the semester (usually week 6), and another two will be undertaken in the latter part of the semester, and will be examined at the end of the semester. Of each of these two pairs of projects, one will be assessed through a written report, and one project will be assessed through a presentation.

All projects in the first part of the course will be offered by academics. In the second part, some projects will be offered by academics and some by the Scottish Financial Risk Academy.

All students can choose any two projects offered in the first part of the course.

Students on the MSc “Stochastic Modelling and Computational Data Science” can choose any two projects in the second half of the course. Students on all other programmes have to select two of the industry projects offered by the Scottish Financial Risk Academy.

The industry projects are offered by a variety of Scottish financial services companies through the Scottish Financial Risk Academy on topics such as

- Market risk
- Credit risk
- Operational risk
- Understanding hedge funds
- Liquidity risk
- Energy and commodity risk
- Risk management in insurance: Solvency II

COURSE RELATIONSHIPS

N/A

LOCATION AND ASSESSMENT METHODS

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