

## COURSE DETAIL

### MACHINE LEARNING AND STOCHASTIC SIMULATION: APPLICATIONS FOR FINANCE, RISK MANAGEMENT AND INSURANCE

**Country**

United Kingdom - England

**Host Institution**

London School of Economics

**Program(s)**

Summer at London School of Economics

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Statistics Computer Science

**UCEAP Course Number**

130

**UCEAP Course Suffix**

S

**UCEAP Official Title**

MACHINE LEARNING AND STOCHASTIC SIMULATION: APPLICATIONS FOR FINANCE, RISK MANAGEMENT AND INSURANCE

**UCEAP Transcript Title**

MACHINE LEARNING

**UCEAP Quarter Units**

5.50

## **UCEAP Semester Units**

3.70

### **Course Description**

Are you looking to develop the skills to solve real-world challenges in finance, risk management, and insurance? These fields often deal with unpredictable phenomena—like investment decisions, insurance claim patterns, or pricing derivatives—which require robust stochastic models and advanced machine learning techniques. To tackle these challenges effectively, it's essential to use robust statistical techniques and calibration methodologies to ensure models are reliable. This course equips students with the tools to apply modern statistical and machine learning methods to these complex problems. Students start by exploring Monte Carlo methods, simulating stochastic processes, and applying Generative Adversarial Networks (GANs) in risk management. They then connect Generalized Linear Models to deep neural networks, discovering their practical applications in the insurance industry. The course also addresses the challenges of calibrating models to ensure their accuracy and reliability. Combining rigorous theory with hands-on coding exercises in Python, students gain experience implementing real-world case studies while strengthening their core data science skills.

### **Language(s) of Instruction**

English

### **Host Institution Course Number**

ME319

### **Host Institution Course Title**

MACHINE LEARNING AND STOCHASTIC SIMULATION: APPLICATIONS FOR FINANCE, RISK MANAGEMENT AND INSURANCE

### **Host Institution Campus**

### **Host Institution Faculty**

**Host Institution Degree**

**Host Institution Department**

Statistics

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