

# MSc Advanced Technology for Financial Computing: Proposed Updated DPT

## Overview

The DPT includes:

- 60 credits of compulsory taught courses in Informatics (30 in each semester)
- 30 credits of option courses from the Business School
- 30 credits of option courses from Informatics or Maths or EPCC

## Proposed Updated DPT

### Compulsory courses:

- Data-driven Business and Behaviour Analytics (INFR11198): 20 credits, S1
- Informatics Research Review (INFR11136): 10 credits, S1
- Introductory Applied Machine Learning (INFR11205): 20 credits, S2. *Note: must be taken in Semester 2*
- Informatics Project Proposal (INFR11147): 10 credits, S2
- **Research Methods in Financial Computing (new 10 credits course as a replacement for IPP),S2**
- MSc Dissertation (Informatics) (INFR11077): 60 credits. *Note: must be passed at 50%*

### Course options:

#### Business School courses

Select exactly 30 credits from the following courses.

*Note: Not all option courses will run in a particular year and are subject to change, timetabling, and/or demand.*

- Managing innovation in context (CMSE11310): 15 credits, S1
- Credit Risk Management (CMSE11122): 15 credits, S2
- Digital Business (BUST10144): 15 credits, S2
- Technology entrepreneurship and commercialisation (CMSE11385): 15 credits, S2
- CMS11515 Innovation-driven entrepreneurship-data science, technology and innovation

#### Informatics MSc Financial Computing CS, Maths and EPCC courses

Select exactly 30 credits from the following courses.

*Note: Not all option courses will run in a particular year and are subject to change, timetabling, and/or demand.*

#### Informatics:

- Text Technologies for Data Science (INFR11145): 20 credits, full year
- Blockchains and Distributed Ledgers (INFR11144): 10 credits, S1
- Natural Computing (INFR11161): 10 credits, S1
- Algorithmic Game Theory and its Applications (INFR11020): 10 credits, S2
- Distributed Systems (INFR11022): 10 credits, S2
- Artificial Intelligence, Present and Future (INFR11180): 10 credits, S2

- Extreme Computing (INFR11088), 10 credits, S1
- Case Studies in AI Ethics (CSAI) (INFR11206), 10 credits, S2

Mathematics:

- Fundamentals of Optimization (MATH11111): 10 credits, S1
- Large Scale Optimization for Data Science (MATH11147): 10 credits, S2
- Finance, Risk and Uncertainty (MATH11132): 10 credits, S1
- Financial Mathematics (MATH10003): 10 credits, S2 (strong math foundations and discuss with the programme director prior choosing this course)
- Credit Scoring (MATH11148): 10 credits, S2
- Discrete-Time Finance (MATH11153), 10 credits, S1

EPCC

- Design and Analysis of Parallel Algorithms (INFR11179), 10 credits, S1
- Numerical Algorithms for High Performance Computing (INFR11174), 10 credits S1