COURSE SPECIFICATION FORM
for new course proposals and course amendments

Department/School:	**Mathematics**	Academic Session:	**2020-21**
Course Title:	Financial Mathematics I	**Course Value:** (UG courses = unit value, PG courses = notional learning hours)	200 h
Course Code:	MT5547	**Course JACS Code:** (Please contact Data Management for advice)	G100
Availability: (Please state which teaching terms)	Term 1	**Status:**	Optional Condonable
Pre-requisites:	An undergraduate course in probability theory and linear algebra	**Co-requisites:**	-

Co-ordinator:	-
Course Staff:	-
Learning Objectives:	This module shows how mathematics is used by those who work in securities markets. The topics in the module are chosen to demonstrate the most important applications, and may include portfolio theory, the basic asset pricing models, the general behaviour of markets and the theory of derivative securities.
Learning Outcomes:	On completion of the module the student should be able to demonstrate an understanding of how financial markets operate, such as the ideas of risk and return and how they can be measured; the random behaviour of the stock market; portfolio optimisation theory, the Capital Asset Pricing Model, the Binomial model, and the Black-Scholes formula for the pricing of options. The student should be able to demonstrate a breadth of understanding appropriate for an M-level course and demonstrate independent learning skills.
Teaching & Learning Methods:	30 hours of lectures. 170 hours of private study, including work on problem sheets and examination preparation. This may include discussions with the course leader if the student wishes.
Key Bibliography:	Paul Wilmott Introduces Quantitative Finance – P Wilmott (Wiley 2007) Library Ref. 332.632 WIL Modern Portfolio Theory and Investment Analysis − E J Elton and M J Gruber (Wiley 2003). Library Ref. 332.6 ELT The Mathematics of Financial Derivatives − P Wilmott, S Howison and J Dewynne (Cambridge 1995). Library Ref. 332.632 WIL
Formative Assessment & Feedback:	Formative assessment in the form of 8 problem sheets. The students will receive feedback as written comments on their attempts.
Summative Assessment:	**Exam:** A two hour written exam: 75% **Coursework:** Miniproject: 10% Set exercises: 15%