COURSE SPECIFICATION FORM

for new course proposals and course amendments

DEPARTMENT OF: Mathematics				**Academic Session: 2020-21**	
Course Code:	MT5434	**Course Value:**	200 h	**Status:** *(ie:Core, or Optional)*	Optional
Course Title:	Time Series Analysis			**Availability:** *(state which teaching terms)*	Term 1
Prerequisites:				**Recommended:**	
Co-ordinator:					
Course Staff					
Learning Objectives:	Time series are observations collected through time where there are correlations among successive observations. Time series data are collected in many fields: finance, economics, medicine, meteorology, agriculture etc. This module aims to introduce some of the descriptive methods and theoretical techniques that are used to analyse time series. The student will appreciate the mathematical tools used in time series analysis, in particular be able to reproduce proofs of selected mathematical results.				
Learning Outcomes:	On completion of the module, the student should be able to: understand basic concepts and notions of time series analysis; understand the standard theory around several prototype classes of time series models; apply appropriate methods of times series analysis and forecasting to a given set of data using an appropriate statistical computing package; appreciate inferential and associated algorithmic aspects of time-series modeling; simulate time series based on several prototype classes and using an appropriate statistical computing package; appreciate the mathematical tools used in time series analysis, in particular be able to reproduce proofs of selected mathematical results. The student should be able to 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:	The Analysis of Time Series. An Introduction - C Chatfield (Chapman and Hall). *Library Ref. 518.3 CHA* An Introduction to Time Series and Forecasting -P J Brockwell and R A Davis (Springer Text in Statistics). *Library Ref. 518.3 BRO*				
Formative Assessment & Feedback:	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% 10 x 5 minute in-class tests and one worksheet: 15% **Deadlines:** n/a				