Revision for MATH 681

Proposal Reference Number	: 3719
PRN Alias	: 11-12#675
Version No	: 2
Submitted By	: Ms Kathryn Lynn Livick
Edited By	: Ms Josie D'Amico

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Summary of Changes	Course Description, Prerequisites

	Current Data	New Data
Program Affected?		N
Program Change Form Submitted?		
Subject/Course/Term	MATH 681 • one term	
Credit Weight or CEU's	4 credits.	
Course Activities	• A - Lecture	
Course Title	**Course Title on Transcript** — Time Series Analysis **Course Title on Calendar** — Time Series Analysis.	
Rationale		There are two motivations for the changes to the course description. First, the original description was somewhat outdated relative to the current level of material taught in the course. Second, with the introduction of MATH 545 as a prerequisite, some additional clarification of what differentiates the two courses was necessary. MATH 681 emphasizes a more theoretical treatment of time series than MATH 545, e.g. note the larger emphasis on asymptotics, greater specificity of topics, and larger amount of material on spectral analysis of time series in MATH 681 compared to MATH 545.
Responsible Instructor		
Course Description	Stationary stochastic processes. Autocovariance and autocovariance generating functions. The periodogram. Model estimation. Likelihood function. Estimation for autoregressive moving average and mixed processes. Computer simulation; diagnostic checking, tests with residuals. Estimation of spectral density; Bartlett, Daniell, Blackman-Tukey spectral windows. Asymptotic moments of spectral estimates.	Linear Processes and the Wold Decomposition; positive definite operators; Autocovariance and autocovariance generating functions; model estimation and inference; estimation for mixed processes using moments and the likelihood; diagnostic checking; tests with residuals; spectral analysis; estimation of spectral density the peridogram; spectral window and tapers; asymptotic moments of spectral estimates;

		fractional noise and long range dependence; continuous time models.
Teaching Dept.	0290 : Mathematics and Statistics	
Administering Faculty/Unit	GR : Graduate Studies	
Prerequisites		MATH 545 or equivalent Web Registration Blocked? : N
Corequisites		
Restrictions		
Supplementary Calendar Info		
Additional Course Charges		
Campus		
Projected Enrollment		
Requires Resources Not Currently Available		
Explanation for Required Resources		
Consultation Reports Attached?		
Effective Term of Implementation		201209
File Attachments		No attachments have been saved yet.
To be completed by the Faculty		
For Continuing Studies Use		

Approvals Summary

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Version No.	Departmental Curriculum Committee	Departmental Meeting	Departmental Chair	Other Faculty	Curric/Academic Committee	Faculty	SCTP	Version Status
2								Approved by Department Meeting Edited by: Josie D'Amico on: Feb 1 2012