Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of 
   Economics

2. Course prefix, number and complete title of course: Ecm 680 • Financial Econometrics

3. Course description (not more than 50 words): Basic concepts of financial engineering and elementary theory of stochastic processes and continuous time models; selected topics related to current financial econometrics research.

4. Prerequisite(s)  

5. Is this a variable credit course?  □ Yes  ✔ No  
   If yes, from ______ to ______.

6. Is this a repeatable course?  □ Yes  ✔ No
   If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term?  □ Yes  □ No

7. Has this course been taught as a 289/489/689?  ✔ Yes  □ No
   If yes, how many times? 1
   Indicate the number of students enrolled for each academic period it was taught. 5 students; offered 07c

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)
      M.S. in Economics, Ph.D. in Economics

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix   Course #   Title (excluding punctuation)  
      ECMT 680 FINANCIAL ECONOMETRICS

      Lect.   Lab   SCH   Subject Matter Content Code   Admin. Unit   Acad. Year   FLCE Code
      0300034506010001081008-09003632
      Level   6

Approval recommended by:

[Signature]  [Date]  Head of Department  

[Signature]  [Date]  Chair, College Review Committee

Head of Department (if cross-listed course)  

[Signature]  [Date]  Dean of College

Submitted to Coordinating Board by:

[Signature]  [Date]  Director of Academic Support Services

[Signature]  [Date]  Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8836.
OAR/AS – 04/07 1 of 4 C8
ECMT 680: Financial Econometrics  
Fall 2008

INSTRUCTOR: Joon Park

OFFICE HOURS: Tuesday 10:00 am – 12:00 pm, Allen 3073

TEACHING ASSISTANT: Yongok Choi

YONGOK’S REVIEW SESSIONS: Friday 2:00-4:00, pm Allen 3067

YONGOK’S OFFICE HOURS: Wednesday 2:00-3:00 pm, Allen 3085

COURSE DESCRIPTION: The objective of this course is to prepare the PhD students for their dissertation research in the area of financial economics and financial econometrics. The course consists of two parts. Part I introduces the basic theory of stochastic process and continuous time models used extensively in financial economics. Part II provides in-depth studies of some selected topics that are related to my previous and current research in financial econometrics. The lectures on Part I will be based on various lecture notes and textbooks in stochastic processes, and the lectures on Part II will mainly use research papers and my research notes. To best understand the lectures and start meaningful research after the course, it is strongly recommended that the students take ECON 689: Topics in Asset Pricing Theory simultaneously. Moreover, I will assume that the students have a good understanding of the material covered in the standard econometrics sequence offered for the first year economics PhD students. Though, not essential, the material lectured in the summer course for time series econometrics will be very helpful to follow this course. Anybody who is uncertain whether or not he/she may take this course should come and talk to me.

GRADING: You will be evaluated on the basis of homework problems (10%), two midterm examinations, equally weighted (30%) and scheduled as follows: Midterm Exam One (Thursday, October 11), Midterm Exam Two (Thursday, November 8), and one final examination (30%) scheduled on Tuesday, December 10. In preparation for these exams, the graded homeworks and lecture notes provided in class and also available online will be exceedingly helpful. Review sessions scheduled every Friday with my teaching assistant, although optional, will present learning opportunities for which absences will exact high opportunity costs. Take advantage of them. The grading scale is as follows: 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; 59 and below = F.

REQUIRED TEXTBOOKS:
REFERENCE TEXTBOOKS:

Stochastic Process Theory:

Finance and Financial Engineering

Financial Econometrics

COURSE CALENDAR

PART I

Week One: August 28 and 30
Introduction to and basic theories of stochastic processes. A review of measuretheoretic probability theory.

Week Two: September 4 and 6
Gaussian processes, Brownian motion and their properties.

Week Three: September 11 and 13
Filtrations, stopping times and related topics.

Week Four: September 18 and 20
Introduction to martingales and their basic properties.

Week Five: September 25 and 27
Discrete time martingales, inequalities, decomposition, and martingale convergence and optional stopping theorems.
Week Six: October 2 and 4  
Continuous time martingales. Extensions of discrete time martingale theories to continuous time martingales, and quadratic variations.

Week Seven: October 9 and 11  
Introduction to Markov processes and their probabilistic foundations.

FIRST MIDTERM: OCTOBER 11

PART II

Week Eight: October 16 and 18  
General theories of Markov processes, infinitesimal generator.

Week Nine: October 23 and 25  
Diffusion models and their properties.

Week Ten: October 30 and November 1  
Ito integral and stochastic calculus.

Week Eleven: November 6 and 8  
Equivalent martingale measure and Girsanov theorem.

SECOND MIDTERM: NOVEMBER 8

Week Twelve: November 13 and 15  
Other topics in stochastic processes, local times and time changes.

Week Thirteen: November 20 and 27  
Selected research topics I: Econometric analysis of diffusion models.

Week Fourteen: November 29 and December 4  
Selected research topics II: Time change and martingale method.

FINAL: DECEMBER 10

UNIVERSITY REGULATIONS:

AGGIE HONOR CODE
"An Aggie does not lie, cheat, or steal or tolerate those who do."
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rule does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.
For additional information, please visit: www.tamu.edu/aggiehonor/

ADA Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.