COURSE DESCRIPTION
FINANCIAL MATHEMATICS MA 492
FALL 2013

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Professor P. Jung
Office: CH 493B
Phone#: (205) 934-2154
E-mail: pjung@uab.edu
Office Hours: TBD

Class Meeting times: 11-12:15 T/TH
Class Meeting location: TBD
Textbook: Mathematics for Finance by Capiński and Zastawniak

Topics
• 1 The notion of no arbitrage
• 2 Interest, compounding, bonds
• 3 Review of mean, variance, and covariance
• 4 Portfolio management: risk and return
• 5 Forwards and Futures
• 6 Put-call parity
• 7 Martingales and conditional expectation
• 8 The binomial model
• 9 Fundamental theorems of asset pricing
• 10 Brownian motion (heuristics)
• 11 Itô’s formula and Girsanov’s theorem (heuristics)
• 12 The Black-Scholes-Merton formula
• 13 Interest rates
• 14 The binomial model for stochastic interest rates

Assessment procedures: HW 35%, Midterm 30%, Final 35%.
MA 592 students will have additional assignments as well as an additional portion
on the Final Exam.