

FE 828 - FIXED INCOME DERIVATIVES - SPRING 2007.

Thursdays 6:00-9:00 - Room SMG 211

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Course description:

The fixed income derivatives market has experienced tremendous growth in recent years as credit risk has become a major factor fostering rapid financial innovation. This course will provide an in-depth approach to credit risk modelling for the specific purpose of pricing fixed income and credit-risk derivatives. The course will explore the nature of factors underlying credit risk and review/develop models incorporating default risk. Types and structures of credit-derivatives will be presented and discussed. Valuation formulas for popular credit-derivatives will be derived. Numerical methods, for applications involving credit derivative forms and default risks, will be presented.

Course material:

1. Schönbucher P.J. *Credit Derivatives Pricing Models: Models, Pricing and Implementation*, Wiley 2003.
2. Duffie D. and Singleton K. *Credit Risk Pricing, Measurement, and Management*, Princeton University Press, 2003. (Optional)
3. Hull J.C. *Options, Futures and Other Derivatives*, Prentice Hall, 2002.
4. Problem sets: to be distributed in class.

Grading: Grades will be based on a midterm exam (40%) and a final exam (60%). Practice problem sets will be distributed in class on a regular basis. Exams are closed book - formula sheets are not allowed.

Course outline:

1. Pricing Principles
2. Fixed Income Securities and their Derivatives
3. Credit Derivatives: an Introduction
4. Credit Spreads and Bond-Based Pricing
5. Mathematical Concepts
6. Advanced Credit Spread Models
7. Recovery Models
8. Implementation: Intensity-Based Models
9. Credit Rating Models
10. Firm Value and Share-Based Models
11. Default Correlation Models.