

DEPARTMENT OF MATHEMATICS SYLLABUS

Course # & Name: MAT 135A: Probability Theory

Recommended Text(s) & Price: Frederick Solomon's "Probability and Stochastic Processes, 1st Edition" (Prentice Hall; \$111.00)

Prepared by: C. Tracy and A. Soshnikov UPC Approval Date: 5/18/2006

| Lecture(s) | Sections | Comments/Topics |
|--------------|----------------------------|--|
| 1.5 Lectures | 1.1-1.4 | The Language and Axioms of Probability. |
| 2.5 Lectures | 2.1-2.4 | Combinatorics. |
| 3 Lectures | 3.1-3.4 | Conditional Probability and Independence. |
| 3 Lectures | 4.1-4.3, 4.5, 4.6, and 4.8 | Discrete Random Variables |
| 3 Lectures | 5.1-5.5 and 5.7 | Continuous Random Variables |
| 4 Lectures | 8.1-8.4 and 8.6 | Joint Probability Distributions |
| 5 Lectures | 9.1-9.3 and 9.5 | Variances, Covariances, etc. |
| 4 Lectures | 10.1-10.4 | The Normal Distribution, CLT, and Law of Large Numbers |

Additional Notes:

Optional Sections are: 3.3, 4.4, 4.7, 5.8, 8.5, 9.4, and 10.6. The core sections should be doable without additional lectures.

One or more optional sections may be covered, depending on the time schedule and instructor's taste.

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SYLLABUS**

Course # & Name: MAT 135A: Probability Theory

Recommended Text(s) & Price: Grimmet and Stirzaker's Probability and
Random Processes, 3rd Edition." (Oxford
University Press; \$69.50

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| Lecture(s) | Sections | Comments/Topics |
|-------------------|------------------------------|--|
| Chapter 1 | 1.1-1.5 | Events and their probabilities. |
| Chapter 2 | 2.1-2.3 | Random variables and their distributions. |
| Chapter 3 | 3.1-3.8 with a little of 3.9 | Discrete random variables. |
| Chapter 4 | 4.1-4.8 | Continuous random variables. |
| Chapter 5 | 5.7-5.10 | Generating Functions and their applications. |

Additional Notes: