MATERIALS FROM MATH 6202

In order to take MATH 6204, you have to know the following materials from MATH 6202 in Part I of the book "Derivative Securities and Difference Methods".

- Approximate expression of the cumulative distribution function for the standardized normal variable and the Black-Scholes formulae. Appear in Sections 2.4. Earliest usage appears in the Project of Chapter 5.
- Definitions of European and American options. Appear in Sections 1.2 and 2.5. Earliest usage appears in Section 6.1.
- The Black-Scholes equation. Appear in Section 2.2. Earliest usage appears in Section 6.2.
- Convert the Black-Scholes equation into a heat equation. Appear in Section 2.2. Earliest usage appears in Section 6.1.
- Convert the Black-Scholes equation into an equation defined on a finite domain. Appear in Section 2.2. Earliest usage appears in Section 6.1.
- Definitions of call and put options. Appear in Section 2.2. Earliest usage appears in Section 6.1.
- The Black-Scholes formulas. Appear in Section 2.4. Earliest usage appears in Section 6.3.
- Linear complementarity problems. Appear in Section 2.5. Earliest usage appears in Section 6.1.
- Definitions of Bermudan options. Appear in Section 2.5. Earliest usage appears in Section 6.3.
- Free-boundary problems. Appear in Section 2.6. Earliest usage appears in Section 7.1.
- Put-call symmetry condition. Appear in Section 2.6. Earliest usage appears in Section 6.3.

- General partial differential equations and three type of state variables. Appear in Section 2.9. Earliest usage appears in Section 6.3.
- Degenerate parabolic partial differential equations. Appear in Section 2.9. Earliest usage appears in Section 5.3.
- Reversion conditions. Appear in Section 2.9. Earliest usage appears in Section 5.3.
- Jump conditions. Appear in Section 2.10. Earliest usage appears in Section 6.2.
- Definitions of Barrier, Parisian, Asian, and lookback options and formulations of these problems. Appear in Sections 3.2, 3.3 and 3.4. Earliest usage appears in Section 6.2.
- Discrete sampling and continuous sampling. Appear in Sections 3.3 and 3.4. Earliest usage appears in Section 6.2.
- Bond equation. Appear in Section 4.2. Earliest usage appears in Section 8.1.
- Inverse problem for determining the market price of interest rate risk. Appear in Section 4.4. Earliest usage appears in Section 8.1.
- Evaluating bond options, swaptions, caps and floors by using the bond equation. Appear in Section 4.5. Earliest usage appears in Section 8.2.
- Three-factor interest rate model. Appear in Section 4.6. Earliest usage appears in Section 8.3.
- Convertible bonds. Appear in Section 4.7. Earliest usage appears in Section 6.3.