INSTITUTE OF MATHEMATICS
College of Science
University of the Philippines Diliman

Math 162 Course Syllabus

A. Course Catalogue Description

Course Number	Math 162
Course Title	Theory of Interest
Course Description	Simple interest; compound interest; continuous interest; annuities; amortization schedules and sinking funds; bonds and other securities; special topics
Prerequisite	Math 22/equiv. or Math 30/equiv.
Course Credit	3 units
Number of Hours	3 hours/week

B. Course Content

I. Course Introduction and Orientation

II. Interests
1. Accumulation and Amount Functions
2. Effective Rate of Interest and Discount, and the consequence when assuming a simple rate or a compound rate
3. Present value and future value
4. Other measures of interest and discount
5. Unknown time, unknown period

III. Annuities
1. Annuity-immediate and annuity-due
2. Current values and perpetuities
3. Annuities payable less/more frequently than interest is compounded
4. Continuous annuities
5. Varying annuities

IV. Applications of Annuities
1. Loan Extinction and Outstanding Balance
2. Amortization and Sinking Fund
3. Basic Financial Securities: Bonds and Stocks
4. Bonds
   a. Pricing formulas
   b. Premium and discount
   c. Valuation between coupon payment dates
   d. Callable bonds
5. Stocks

V. Interest Rate Measurements
1. Discounted cash flow analysis
2. Yield rates and the uniqueness of yield rates
3. Reinvestment rates and inflation rates
4. Interest measurement of a fund over one period
   a. Money-weighted method
   b. Time-weighted method
5. Spot rates and forward rates
6. Bootstrapping method of finding rates from bond prices

For a more detailed syllabus, send an email request to ddapr@math.upd.edu.ph.