Instructors: Gerard J. Lian, Joseph R. Arcieri and Jerrold H. Abrahams

This team-taught course is designed to provide students with an understanding of basic skills used in three disciplines of municipal finance: (1) municipal credit analysis; (2) municipal portfolio management; and (3) municipal derivatives management. Although no prerequisites are prescribed, unless waived, students are required to have completed P11.2144 Debt Finance and Management for Public Organizations or P11.4216 Financial Statement Analysis for Health Care and Not-for-Profit Organizations and also to have acquired competency in basic software programs such as Excel, Word and PowerPoint.

This course is organized and developed in three segments. Part 1 begins with a detailed examination of select sectors of municipal credit analysis. Part 2 provides a thorough introduction to municipal portfolio management. Part 3 centers upon the analysis of the use of municipal derivatives.

Texts and Readings

Municipal Credit Analysis
- National Federation of Municipal Analysts, Recommended Best Practices in Municipal Disclosure, NFMA, 2004

Portfolio Management

Municipal Derivatives
• John C Hull, Options, Futures and Other Derivatives (6th or 7th edition), Prentice Hall Series in Finance, 2008
• John F. Marshall and Kenneth Kapner, Understanding Swaps, Wiley Finance

Grading:

Grades will be developed as follows: (a) 60% of your grade will be based upon completion of a test or assignment prescribed in each course segment: 20% for municipal credit analysis, 20% for municipal portfolio management and 20% for municipal derivatives; and (b) the remaining 40% will be based upon an integrated final project that tests basic skills acquired in each course segment.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Municipal Credit Analysis Project</td>
<td>20%</td>
<td>Feb. 16, 2010</td>
</tr>
<tr>
<td>Municipal Portfolio Management</td>
<td>20%</td>
<td>Mar. 23, 2010</td>
</tr>
<tr>
<td>Municipal Derivatives</td>
<td>20%</td>
<td>Apr. 20, 2010</td>
</tr>
<tr>
<td>Final Project</td>
<td>40%</td>
<td>May 07, 2010</td>
</tr>
<tr>
<td>Total:</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Class Schedule and Readings

Set forth below is a detailed listing of class lectures, topics and corresponding reading assignments, organized for each course segment. In order to actively participate in classroom discussion, these readings are to be completed prior to class.

Lecture 1  Introduction and General Course Overview (Jan. 19, 2010)

This initial lecture will consist of a general introduction to the course and an overview of the course materials. Initial reading assignments to be completed are set forth below.

Topics to be covered in this initial class will consist of a variety of issues, including:
- Importance of municipal debt financing within American federal system
- Eligible uses of municipal debt issuance under the Federal Tax Code
- Impact of the Credit Crisis on Municipal Finance and Capital Markets
- Introduction of Taxable Build America Bonds to the Municipal Market

**Readings:**

<table>
<thead>
<tr>
<th>Section 103 of the Internal Revenue Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsidizing Infrastructure With Tax-Preferred Bonds</td>
</tr>
<tr>
<td>Fabozzi &amp; Feldstein, Handbook</td>
</tr>
<tr>
<td>The Fundamentals of Municipal Bonds</td>
</tr>
<tr>
<td>The Fundamentals of Municipal Bonds</td>
</tr>
<tr>
<td>Fabozzi &amp; Feldstein, Handbook</td>
</tr>
</tbody>
</table>

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**Part 1: Municipal Credit Analysis**  (Lectures 2, 3, 4 and 5)

**Instructor:** Gerard J. Lian

The first segment of the course consists of learning how to evaluate credit risk with respect to four sectors of the municipal bond market: (a) Investment Grade Municipal Bonds; (b) Tax-Exempt Corporate Debt; (c) High Yield Municipal Bonds; and (d) Global Municipal Finance. Your grade for this course segment will be based upon a take-home Credit Analysis Project for a credit selected from one of the first three sectors enumerated above which evaluates quantitative and qualitative credit factors based upon published rating criteria extracted from the
list of readings. Performance on this Credit Analysis Project will account for 20% of your final grade.

There are three primary texts for this segment of the course. These are:

- Analysis of Financial Statements (5th Ed) Berstein & Wild
- The Handbook of Municipal Bonds (Fabozzi & Feldstein, 2008 ed.)
- Public Finance Criteria 2007 (Standard & Poor’s Corporation)

Additional reference will be made to specific publications that consist of a collection of articles from periodicals and rating agency reports on within specific credit sectors relating to Investment Grade Municipal Debt, Corporate IDB Debt, High Yield Municipal Debt and Global Credit Analysis and Infrastructure Finance. You may also wish to refer to Recommended Best Practices in Disclosure downloadable from the NFMA website (http://www.nfma.org/disclosure.php) which distills material credit criteria on a sector-specific basis into useful analytical frameworks for virtually all municipal credit sectors.

Lecture 2  Investment Grade Municipal Credit Analysis  (Jan. 26, 2010)

This lecture will focus upon the credit analysis of a representative sample of investment grade municipal bonds. Topics to be covered in this class include:

1. Methodology and Framework for Analyzing Municipal Bonds
2. Credit Analysis of Specific Sectors

   - Public Power Bonds
   - Airport Bonds
   - Single Family Housing Bonds

**Readings:**

<table>
<thead>
<tr>
<th>The Fundamentals of Municipal Bonds</th>
<th>Judy Wesalo Temel</th>
<th>Credit Analysis Ch. 7, pgs. 158-190</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabozzi &amp; Feldstein, Handbook</td>
<td>Gary Krellenstein</td>
<td>Tax-Exempt Electric Utility Debt Ch. 55, pgs. 925-939</td>
</tr>
<tr>
<td>Fabozzi &amp; Feldstein, Handbook</td>
<td>Oliver &amp; Clements</td>
<td>How to Analyze Airport Bonds Ch. 50, pgs. 813-818</td>
</tr>
<tr>
<td>Fitch Criteria Report</td>
<td>Cherian George</td>
<td>Rating Criteria for General Airport Bonds (3-12-07) Pgs. 1-10</td>
</tr>
<tr>
<td>Fabozzi &amp; Feldstein, Handbook</td>
<td>Kurt Van Kuller</td>
<td>How to Analyze SFMR Bonds Ch. 53, pgs. 892-921</td>
</tr>
</tbody>
</table>
Lecture 3  
**Analysis of Tax-Exempt Corporate Debt**  (Feb. 2, 2010)

This lecture will focus upon analyzing credit quality for various types of corporate-backed debt. Credits and topics to be covered in this class include:

1. Investor-Owned Utilities
2. Project Finance
3. Exempt Facility Corporate Debt
4. A Quick Look at Bond Insurers

**Readings:**

<table>
<thead>
<tr>
<th>Readings</th>
<th>Author</th>
<th>Description</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of Financial Statements</td>
<td>Bernstein &amp; Wild</td>
<td>Quick review of key corporate financial ratios: liquidity, capital structure annual debt service and earnings coverage</td>
<td>118 – 126; 179-186; 198-200; 205-221</td>
</tr>
<tr>
<td>Fitch Criteria Report</td>
<td></td>
<td>Rating Approach to Project Finance (8-12-04)</td>
<td>1-12</td>
</tr>
<tr>
<td>Fabozzi &amp; Feldstein, Handbook</td>
<td>Gary Krellenstein</td>
<td>PCR, IDB and Conduit Financing</td>
<td>Ch. 51, pgs. 1041 -1048</td>
</tr>
<tr>
<td>Fitch Criteria Report</td>
<td></td>
<td>Corporate Rating Methodology (6-13-06)</td>
<td>1-7</td>
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<tr>
<td>Fitch Criteria Report</td>
<td></td>
<td>Cash Flow Measures In Corporate Analysis (10-12-05)</td>
<td>1-11</td>
</tr>
<tr>
<td>Fitch Criteria Report</td>
<td></td>
<td>Credit Rating Guidelines for Regulated Utilities (7-31-07)</td>
<td>1-11</td>
</tr>
<tr>
<td>The Rise and Fall of the Monolines, Part I and II</td>
<td></td>
<td>Credit Sights (11-20-08)</td>
<td>1 -12</td>
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</tbody>
</table>

Lecture 4  
**Analysis of High Yield Debt**  (Feb. 9, 2010)
This lecture will focus upon evaluating credit risk and relative value in the municipal high yield market. There will be at least one (1) Guest Lecturer for this credit segment. Credit sectors and topics to be covered include:

1. MMD Spreads in the Municipal Market
2. Yield and Return Differentiation in High Yield Sector
3. Leading High Yield Credit Sectors
   a. Continuing Care Retirement Communities
   b. Charter Schools
   c. Land Secured Debt

**Readings:**

<table>
<thead>
<tr>
<th></th>
<th>Rating Guidelines for Non-profit CCRCs (10-27-98)</th>
<th>Pgs. 1-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitch Criteria Report</td>
<td></td>
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<tr>
<td>Land Secured Debt Financings</td>
<td>Moody’s Land Secured Debt</td>
<td>Pgs 1-4) (Dec. 2008)</td>
</tr>
</tbody>
</table>

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**Lecture 5  New Frontiers in Credit Analysis (Feb. 16, 2010)**

The final lecture on credit quality will focus on new developments in municipal credit analysis in terms of the globalization of municipal debt financing. There will be two (2) Guest Lecturers for this credit segment. New Frontiers in credit analysis are emerging in three areas:

1. Infrastructure Assets
2. Public Private Partnerships
3. Global Public Finance

**Readings:**

<table>
<thead>
<tr>
<th></th>
<th>Cherian George</th>
<th>US Toll Road Privatizations: Seeking the Right Balance</th>
<th>Pgs. 1 - 10</th>
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</thead>
<tbody>
<tr>
<td>Fitch Criteria Report</td>
<td>Cherian</td>
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<tr>
<td>Fitch Criteria Report</td>
<td>Cherian Global Toll</td>
<td></td>
<td>Pgs. 1 - 21</td>
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<tr>
<td><strong>Optional Readings</strong></td>
<td></td>
<td>Accelerating Municipal Bond Market Development in Emerging Economies: An Assessment of Strategies &amp; Progress</td>
<td>Pgs. 1-24</td>
</tr>
<tr>
<td>Research Triangle Institute</td>
<td>James Leigland</td>
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</table>

**Part 2:** **Municipal Portfolio Management** (Lectures 6, 7, 8 and 9)

**Instructor:** Joseph R. Arcieri

The second segment of the course focuses upon municipal portfolio management. This group of lectures will discuss and consider: (a) an overview of municipal portfolio management; (b) risk parameters and diversification; (c) the investment process and basic portfolio construction; and (d) different measures of portfolio performance. Your grade for this course segment will be based upon completion of a portfolio management exercise which will account for 20% of your final grade.

There are various assigned readings from two textbooks for this segment of the course. (Both books are on reserve in the library.) These are:

Lecture 6  **An Overview of Municipal Portfolio Management**  (Feb. 23, 2010)

1. Portfolio Management Defined  
   a. The Investment Environment  
   b. Real Assets versus Financial Assets  
   c. Markets and instruments  

2. Municipal Securities  
   a. Unique characteristics  

3. Types of Municipal Bond Portfolios  
   a. Retail  
   b. Institutional  

4. Investment Objectives  
   a. Tax-Free Income  
   b. Preservation of Capital  
   c. Total Return  

5. Bond Structure, Pricing and Math  
   a. Bond characteristics  
   b. How Bond Prices and Yields are determined  
   c. Calculating Yield (current, coupon, yield to worst)  
   d. Tender Option Bonds  

6. Price Transparency  
   a. Rule G-14 Real Time Transaction Reporting  
   b. SIFMA (www.investinginbonds.com)
### Lecture 7  **Risk Parameters and Diversification**  *(Mar. 2, 2010)*

1. Risks in Fixed Income Investing
   a. Credit Risk
      - Bond Insurance
      - High Yield
   b. Market/Interest Rate Risk
      - Interest Rate Forecasting
      - Term Structure of interest rates
      - Changes in the Yield Curve
        - Normal or positive yield curve
        - Inverted or negative yield curve
   c. Relative Value (Inter and Intra Market)
      - Municipals versus Treasuries
      - Tax Reform
      - State Markets
   d. Other Risks
      - Reinvestment
      - Liquidity
      - Call

2. Measuring Interest Rate Sensitivity
   a. Duration
      - Modified vs. Effective
   b. Convexity
3. Limiting Risk
   a. Portfolio Diversification
      - Credit quality
      - Sector
      - Geographic
      - Maturity
   b. Investment Guidelines and Regulations
   c. Other tools

<table>
<thead>
<tr>
<th>Readings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Bond Portfolio Management</td>
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<td></td>
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<tr>
<td>Investopedia</td>
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Lecture 8  The Investment Process / Managing a Portfolio  (Mar. 9, 2010)

1. Portfolio Construction
   a. Investment Objectives
   b. Investment Strategy
   c. Portfolio Composition and Guidelines
   d. Risk Control and Measurement

2. Investment Strategies – Selecting, Buying and Trading Bonds
   a. Selecting Bonds
   b. Traditional Strategies
      - Buy and Hold
      - Bullets and Barbells
      - Ladders
   c. Trading Strategies – Bond Swaps
   d. Alternative Strategies
      - Hedging

3. Building Model Portfolios
   a. Investment Grade Portfolios
      - Intermediate Maturity
      - Long-Term Maturity
- State Specific
  
b. High Yield Portfolios  
c. Money Market Portfolios

<table>
<thead>
<tr>
<th>Readings:</th>
<th>Fundamentals of Municipal Bonds</th>
<th>Judy Wesalo Temel</th>
<th>Ch. 6, pgs. 136-149</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuveen</td>
<td>-</td>
<td>Municipal Bond Fund Prospectus</td>
<td></td>
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<td></td>
<td>-</td>
<td>Statement of Additional Information</td>
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**Lecture 9**  **Performance Measurements  (Mar. 23, 2010)**

1. Measuring Investment Returns  
   a. Comparative Returns  
   b. Peer Rankings 
      - Lipper  
      - Morningstar  
   c. Benchmarks/Indices

2. Compliance and Regulations

3. Final Thoughts  
   a. Individual Bonds vs. Bond Funds  
   b. ETF’s  
   c. Portfolio Management: Art vs. Science

6. Review Portfolio Management Project

<table>
<thead>
<tr>
<th>Readings:</th>
<th>ETF Connect Education Center</th>
<th>- Know Your Bonds</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- Index ETF’s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Municipal Bond Portfolio Management</th>
<th>F. Fabozzi et. al.</th>
<th>Ch. 14, pgs. 254-260</th>
</tr>
</thead>
</table>

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**Part 3:**  **Municipal Derivatives  (Lectures 10, 11, 12 and 13)**

**Instructor:**  **Jerrold H. Abrahams**
The third segment of the course focuses upon municipal derivatives management. This group of lectures will discuss and consider: (a) an overview of the derivatives market; (b) a detailed examination of derivative instruments in the public sector; (c) a review of common interest rate swap structure; and (d) an in-depth profile of derivatives origination and management in the municipal market. Your grade for this course segment will be based upon completion of a derivatives project/assignment or exercise(s) which will account for 20% of your final grade.

There are two primary texts and others assigned readings for this segment of the course. These are:

- Derivatives in the Public Sector (Published by Citi)
- Understanding Swaps (Marshal and Kapner) Published by J. Wiley & Sons


1. Types of Derivatives Instruments
   a. Definition of a Swap
   b. Why does such a thing exist
   c. How is it used
      1. Primary Market
      2. Secondary Market, investment side
      3. Other uses

2. Interest Rate Swaps

3. Other Types of Swaps
   a. Commodity
   b. Credit
   c. Currency

4. Common Municipal Derivative Structures
   a. BMA Swaps
   b. Libor Swaps
   c. Forwards and Rate Locks
   d. Carry Trades

5. Interest rate Derivative Transaction Structures
   a. Floating-vs-Fixed
      1. Synthetic fixed rate
      2. Description
      3. Application – how it is used
      4. Risks and benefits
b. Fixed-vs-Floating Swaps
   1. Synthetic floating – Carry trade
   2. Description
   3. Application – how it is used
   4. Risks and benefits

<table>
<thead>
<tr>
<th>Readings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals of Municipal Bonds</td>
</tr>
<tr>
<td>Marshall/Kapner</td>
</tr>
<tr>
<td>DIPS</td>
</tr>
</tbody>
</table>

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**Lecture 11  Derivatives in the Public Sector  (Apr. 6, 2010)**

c. Basis Swaps
   1. Tax Risk
   2. Description
   3. Application – how it is used
   4. Risks and benefits
d. Swaptions
   1. Refundings – limitations of advance refunding, up-front money
   2. Description
   3. Application – how it is used
   4. Risks and benefits
e. Options, Caps and Floors
   1. Interest rate risk mitigation
   2. Description
   3. Application – how it is used
   4. Risks and benefits

<table>
<thead>
<tr>
<th>Readings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIPS</td>
</tr>
</tbody>
</table>
Lecture 12  Elements of Interest Rate Swap Structure  (Apr. 13, 2010)

Review common interest rate swap structure
1. Construction of Swap Curve
2. Risk and Reward
3. Benefits
4. Risks
   i. Credit Risk
   ii. Tax Risk
   iii. Basis Risk

Readings:
Marshall/Kapner  | Chapter 3.0 to 3.6.1

* * *

Lecture 13  Profile of Municipal Derivatives Market  (Apr. 20, 2010)

1. Market Participants
   a. Dealers and Desks
   b. Banker and Originators
   c. Issuers
   d. Insurers
   e. Attorneys
   f. Back-Office/Legal and Credit
2. Size of market
3. Procurement Approaches
   a. Negotiated versus Competitive
4. Swap documentation
5. Recent developments
   a. Issuer downgrades
   b. Jefferson County
6. A typical swap from A to Z
   a. Case Studies
   b. What would you do?

Readings:
Marshall/Kapner  | Chapter 8.6
1. Summary of Credit Risk Analysis
   - Review of Key Analytical Criteria
   - Future trends and issues
   - Final thoughts and observations
2. Summary of Municipal Portfolio Management
   - Review of Key Portfolio Points
   - Future trends and issues
   - Final thoughts and observations
3. Summary of Municipal Derivatives
   - Review of Key Derivatives Points
   - Future trends and issues
   - Final thoughts and observations
4. Discussion of Final Project