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. 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**

**Portfolio Management**

**Municipal Derivatives**
- 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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<tr>
<td>Municipal Credit Analysis Project</td>
<td>20%</td>
<td>Feb. 22, 2011</td>
</tr>
<tr>
<td>Municipal Portfolio Management</td>
<td>20%</td>
<td>Mar 29, 2011</td>
</tr>
<tr>
<td>Municipal Derivatives</td>
<td>20%</td>
<td>Apr. 26, 2011</td>
</tr>
<tr>
<td>Final Project</td>
<td>40%</td>
<td>May 17, 2011</td>
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<td>Total:</td>
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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. 25, 2011)

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 to Build America Bonds and other taxable options
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 areas of the municipal bond market: (a) Investment Grade Municipal Bonds; (b) Tax-Exempt Corporate Debt; (c) Public Private Partnerships; and (d) Public Pensions and OPEB Liabilities. Your grade for this course segment will be based upon a take-home Credit Analysis Project for a credit selected from one of these sectors enumerated above which evaluates quantitative and qualitative credit factors based upon published rating criteria or other criteria extracted from the list of readings. Performance on this Credit Analysis Project will account for 20% of your final grade.

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

- The Handbook of Municipal Bonds (Fabozzi & Feldstein, 2008 ed.)
Additional reference will be made to specific publications that consist of a collection of articles from periodicals and rating agency reports on specific credit sectors relating to Investment Grade Municipal Debt, Corporate IDB Debt, Public Private Partnerships and Public Pensions and OPEB liabilities.

Lecture 2  Municipal Credit Analysis Part I (Feb 1, 2011)

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

Readings:

<table>
<thead>
<tr>
<th>Readings</th>
<th>Authors</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Fundamentals of Municipal Bonds</td>
<td>Judy Wesalo Temel</td>
<td>Credit Analysis</td>
<td>Ch. 7, pgs. 158-190</td>
</tr>
<tr>
<td>An Analyst’s Guide to Financial Statements</td>
<td>Dean Michael Mead</td>
<td>Overview of Financial Statement Info; Proprietary Funds</td>
<td>Pgs. 5-6;</td>
</tr>
<tr>
<td>Fabozzi &amp; Feldstein, Handbook</td>
<td>Gary Krellenstein</td>
<td>Tax-Exempt Electric Utility Debt</td>
<td>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</td>
<td>Ch. 50, pgs. 813-818</td>
</tr>
<tr>
<td>Fitch Criteria Report</td>
<td>Cherian George</td>
<td>Rating Criteria for General Airport Bonds</td>
<td>Pgs. 1-10</td>
</tr>
</tbody>
</table>

* * *
Lecture 3  **Municipal Credit Analysis Part II** *(Feb. 8, 2011)*

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. Single Family Housing Bonds
2. Investor-Owned Utilities
3. Fundamentals of Bond Insurance

<table>
<thead>
<tr>
<th>Readings:</th>
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<tbody>
<tr>
<td>Fabozzi &amp; Feldstein, Handbook</td>
<td>Kurt Van Kuller</td>
<td>How to Analyze SFMR Bonds</td>
<td>Ch. 53, pgs. 892-921</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>Pgs 1-7</td>
</tr>
<tr>
<td>Fitch Criteria Report</td>
<td></td>
<td>Cash Flow Measures In Corporate Analysis (10-12-05)</td>
<td>Pgs. 1-11</td>
</tr>
<tr>
<td>Fitch Criteria Report</td>
<td></td>
<td>Credit Rating Guidelines for Regulated Utilities (7-31-07)</td>
<td>Pgs. 1-11</td>
</tr>
<tr>
<td>The Rise and Fall of the Monolines, Part I and II</td>
<td>Credit Sights (11-20-08)</td>
<td>Pgs. 1-12</td>
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Lecture 4  **Public Private Partnerships** *(Feb. 15, 2011)*

The third lecture on credit quality will focus on issues and topics relating to the rise and use of Public Private Partnerships. There will be at least (1) Guest Lecturer for this credit segment. Topics to be covered include:
1. Overview of Public Private Partnerships
2. Examples of Public Private Partnerships
3. Theoretical Considerations for Public Administrators

Readings:

<table>
<thead>
<tr>
<th>Reading</th>
<th>Author</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitch Criteria Report</td>
<td>Cherian George</td>
<td>US Toll Road Privatizations: Seeking the Right Balance</td>
<td>1-10</td>
</tr>
<tr>
<td>Fitch Criteria Report</td>
<td>Cherian George</td>
<td>Global Toll Road Rating Guidelines</td>
<td>1-21</td>
</tr>
<tr>
<td>Global Infrastructure</td>
<td>Irene Walsh</td>
<td>Structuring Effective Public Private Partnerships (Deloitte 2009)</td>
<td>1-32</td>
</tr>
<tr>
<td>Global Infrastructure</td>
<td>Irene Walsh</td>
<td>Changing Landscape for Infrastructure Funding (Deloitte 2009)</td>
<td>1-16</td>
</tr>
</tbody>
</table>

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Lecture 5  **Public Pensions and OPEBs**  *(Feb. 22, 2011)*

This lecture will focus upon evaluating public pension debt and OPEB liabilities and their impact upon municipal debt capacity. There will be at least one (1) Guest Lecturer for this credit segment. Credit sectors and topics to be covered include:

1. Public Pension and OPEB Liabilities
2. Key Accounting Measures and other Metrics
3. Profile of Present Funding Crisis
4. Financial Impact Upon Debt Capacity
5. Road to Reform
### Readings:

<table>
<thead>
<tr>
<th>Title</th>
<th>Author/Institution</th>
<th>Pages</th>
</tr>
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<tbody>
<tr>
<td>An Analysts Guide to Financial Statements</td>
<td>GASB</td>
<td>Pgs. 77-79</td>
</tr>
<tr>
<td>Public Pension Primer</td>
<td>Wells Fargo Securities</td>
<td>Pgs 1-10 (Nov. 2010)</td>
</tr>
<tr>
<td>2010 State Pension Funding Review</td>
<td>Loop Capital Markets</td>
<td>Pgs 1-5; 16-22; 26-29</td>
</tr>
<tr>
<td>Benchmarking &amp; Measuring Debt Capacity</td>
<td>GFOA</td>
<td>Pgs 11-20; 31-41</td>
</tr>
</tbody>
</table>

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

**Instructor:** Joseph R. Arcieri

The second segment of the course is an introduction to municipal portfolio management. It emphasizes the unique characteristics of municipal securities and their influence on portfolio management. Lectures will cover a broad range of topics including bond characteristics, bond pricing, risk measures, such as bond duration, portfolio models and trading strategies. Lectures will also focus on the working relationship and interdependence between portfolio managers, credit analysts and other market participants.

Grades for this course segment will be based upon class participation and a take-home project. The project will consist of constructing a model portfolio based on criteria discussed in class.

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

Additional reference will be made to several websites. These include:

- Municipal Securities Rulemaking Board (www.msrb.org)
- SIFMA (www.investinginbonds.com)
- Standard & Poor’s Municipal Indices (www.kennyweb.com)
- Municipal Market Advisors (www.mma/research.com)
- Vanguard (www.vanguard.com)
- Investopedia (www.investopedia.com)
- Nuveen (www.nuveen.com)
- SEC (www.sec.gov/investor/pubs/inwsmf.htm)
- ETF Connect (www.etfconnect.com)
- FICALC (www.ficalc.com/calc.tips)

Lecture 6  **An Overview of Municipal Portfolio Management**  (Mar. 1, 2011)

1. Portfolio Management Defined
   a. Portfolio Management: Art vs. Science
   b. Sidney Homer and *Inside the Yield Book*
   c. Taxable vs. Tax-Exempt Investing

2. Markets and Instruments
   a. Municipal securities
   b. 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)

7. Portfolio Management Project – Part 1

<table>
<thead>
<tr>
<th>Readings:</th>
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</thead>
<tbody>
<tr>
<td>Fundamentals of Municipal Bonds</td>
<td>Judy Wesalo</td>
<td>Ch. 2, pgs. 21-33</td>
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<tr>
<td></td>
<td>Temel</td>
<td>Ch. 6, pgs. 126-135 &amp; 149-158</td>
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<tr>
<td>Investopedia - Tutorials</td>
<td>Bond &amp; Debt</td>
<td>Sections 3 &amp; 4</td>
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<td>Basics</td>
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<tr>
<td>Investopedia - Tutorials</td>
<td>Advanced</td>
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<tr>
<td></td>
<td>Bond Analysis</td>
<td>Section 3 &amp; 4</td>
<td></td>
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<tr>
<td>SEC – online publication</td>
<td>Introduction to Mutual Funds</td>
<td></td>
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<tr>
<td><a href="http://www.sec.gov/investor/pubs.inwsfm.htm">www.sec.gov/investor/pubs.inwsfm.htm</a></td>
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Lecture 7  Risk Parameters and Diversification (Mar. 8, 2011)

1. Risks in Fixed Income Investing
   a. Credit Risk
      · 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

4. Portfolio Management Project – Part 2

**Readings:**

| Municipal Bond Portfolio Management | Fabozzi et. al. | Ch. 2 pgs. 26 - 31
|                                 |               | Ch 7 pgs. 96-109 |
| Investopedia                      | Adv. Bond Analysis | Sections 5 to 9 |

* * *

**Lecture 8**  **The Investment Process / Managing a Portfolio**  (Mar. 22, 2011)

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

4. Portfolio Management project – Part 3

Readings:

<table>
<thead>
<tr>
<th>Fundamentals of Municipal Bonds</th>
<th>Judy Wesalo Temel</th>
<th>Ch. 6, pgs. 136-149</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuveen (<a href="http://www.nuveen.com">www.nuveen.com</a>)</td>
<td></td>
<td>Municipal Bond Fund Prospectus</td>
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<td></td>
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<td>Statement of Additional Information</td>
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Lecture 9   Performance Measurements (Mar. 29, 2011)

1. Measuring Investment Returns
   a. Comparative Returns
   b. Peer Rankings
      Lipper
      Morningstar
   c. Benchmarks/ Indices
2. Compliance and Regulations
3. Portfolio Management Project - Conclusion

<table>
<thead>
<tr>
<th>Readings:</th>
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</thead>
<tbody>
<tr>
<td>Standard &amp; Poor's Municipal Indices (<a href="http://www.kennyweb.com">www.kennyweb.com</a>)</td>
</tr>
<tr>
<td>Municipal Bond Portfolio Management</td>
</tr>
</tbody>
</table>

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

Instructor: Jerrold H. Abrahams

The third segment of the course will focus on three topics that are especially relevant to the challenges facing state and local governments and not-for-profit enterprises. The first two lectures (10 and 11) will be an overview of the municipal derivatives market. Course lectures and readings will provide an in-depth survey of the non-traditional financial strategies available to tax-exempt issuers. Emphasis will be on historical uses and management of legacy financial positions. Lecture 12 will be an overview of the financing of renewable energy projects in the tax-exempt sector. Lecture will review challenges and subsidies available under current law and governmental policy. Lecture 13 will be a review of the current financial challenges facing state and local governments. This lecture will review recent cases of municipal distress with an analysis on the factors that contribute to turmoil.

Your grade for this course segment will be based upon completion of an 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
Lecture 10  An Overview of the Derivatives Market  (Apr 5, 2011)

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
Lecture 11  Derivatives in the Public Sector  (Apr. 12, 2011)

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

Readings:

<p>| | | |</p>
<table>
<thead>
<tr>
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<tr>
<td>DIPS</td>
<td>Pgs. 38 to 59</td>
<td></td>
</tr>
<tr>
<td>Marshall/Kapner</td>
<td>Chapter 3.0 to 3.6.1</td>
<td></td>
</tr>
<tr>
<td>Marshall/Kapner</td>
<td>Chapter 8.6</td>
<td></td>
</tr>
</tbody>
</table>
Lecture 12  **Financing Green Energy Projects**  (Apr. 19, 2011)

Overview of economics of renewable energy projects

1. Economic challenges
2. Available federal subsidies
3. SREC market and state subsidies

4. Review of simplified financial model

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1. Jefferson County Sewer Authority
2. City of Harrisburg, PA

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Lecture 14  **Recap, Conclusion and Closing Remarks**  (May 3, 2011)

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