George Mason University
Graduate Course Approval/Inventory Form

Please complete this form and attach a copy of the syllabus for new courses. Forward it as an email attachment to the Secretary of the Graduate Council. A printed copy of the form with signatures should be brought to the Graduate Council Meeting. Complete the Coordinator Form on page 2, if changes in this course will affect other units.

Please indicate: ___X__ NEW  ____ MODIFY  ____ DELETE

Local Unit: SPP  Graduate Council Approval Date: 

Course Abbreviation: PUBP  Course Number: 752

Full Course Title: Infrastructure Finance

Abbreviated Course Title (24 characters max.): Infrastructure Finance

Credit hours: 3  Program of Record: TPOL

Repeateable for Credit? ___ D=Yes, not within same term  Up to hours ___ T=Yes, within the same term  Up to hours ___ X_ N=Cannot be repeated for credit

Activity Code (please indicate): _X__ Lecture (LEC) ___ Lab (LAB) ___ Recitation (RCT) ___ Studio (STU) ___ Internship (INT) ___ Independent Study (IND) ____ Seminar (SEM)

Catalog Credit Format 3: 3 : 0  Course Level: GF(500-600) ____ GA(700+) ___X__

Maximum Enrollment: 25  For NEW courses, first term to be offered: 04F

Prerequisites or corequisites:

Catalog Description (35 words or less) Please use catalog format and attach a copy of the syllabus for new courses.

Covers the planning, budgeting and financing of infrastructure, including air, water and surface transportation, public utilities, and other major public works. Focuses on private capital markets for projects funding as well as domestic and international loan and grant programs.

For MODIFIED or DELETED courses as appropriate:

Last term offered:  Previous Course Abbreviation:  Previous number:

Description of modification:

APPROVAL SIGNATURES:
Submitted by: email: 

Department/Program: Date: 

College Committee: Date: 

Graduate Council Representative: Date: 

Approval from other units:

Please list those units outside of your own who may be affected by this new, modified, or deleted course. Each of these units must approve this change prior to its being submitted to the Graduate Council for approval.

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<thead>
<tr>
<th>Unit:</th>
<th>Head of Unit’s Signature:</th>
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Graduate Council approval: ___________________________ Date: __________

Graduate Council representative: ______________________ Date: __________

Provost Office representative: ________________________ Date: __________
Course Number:  PUBP 714  REVISED September 2, 2003

Tuesdays: 4:30 PM to 7:00 PM
Starting August 26 and ending December 2, with Final Exam on December 9

Course Description

Financing major facilities and projects is a critical issue in public policy. The design and implementation of public works projects are vital activities, not only to economic development, but also to sustaining commerce and providing for everyday life. This course deals with the planning, budgeting and financing of capital projects, otherwise known as infrastructure. Such areas as air, water and surface transportation, public utilities, and other major public works are examined. Because these investments require large amounts of capital, considerable emphasis is placed on the accessing of the private capital markets for the funding of projects, as well as various domestic and international loan and grant programs. While much of the subject matter in this course deals with the United States, the perspective is both domestic and international. Both publicly and privately owned and operated facilities and their financing are studied. Case study projects and specific transactions will be examined and analyzed.

Infrastructure finance, while essentially comprised of much the same basic ingredients in terms of risk and rewards and needs for long-term capital, is very much a product of the various institutional setting and prevailing financial market structures. In this course, we will get to know one financial market fairly well, the U.S. municipal bond market, and how it is used to finance infrastructure. But, we will sample other ways of financing capital spending as seen in other countries, as well.

Summary of Subjects Covered

- Fundamentals of Capital Project Financial Planning and Analysis
  - Concepts of economic and financial returns, cost of capital, discounting, risk and reward
- Capital Budgeting in Government and the Firm. Decisionmaking over time, choice among alternatives, differences and similarities in public and private sectors
- Various Operating and Financing Structures
  - Government – owned, Privately – owned, and mixed
  - Project Finance Structures, International Experiences and Perspectives
- Sources of Capital and market essentials
  - Concepts of financial risk and reward, security and creditworthiness
  - The financial markets and banks, Intergovernmental grants and loans
  - The roles of equity and debt in the public and private sectors
- The U.S. Municipal Bond Market
  - Structure and operations of the market, how deals and developed and structured
  - Credit ratings and enhancements
- International and emerging capital Markets
  - Structure and operation -- Growth, contraction and future prospects
- General Government (tax-supported) and other facilities
  - Schools and other tax-supported uses of funds
- Transportation Finance
  - Highways and Toll Facilities
  - Airports, Ports and Terminals
- Environmental and Energy Finance
  - Water supply and sewer
  - Power Electric/Gas
- Economic and Community Development
  - Value-capture and various subsidized mechanisms
  - Real estate markets and project finance issues
- Doing Deals: Nuts and Bolts of Project Structuring and Negotiation
  - Issues in privatization and public/private co-operation
Sources and Readings

Aronson, Richard and Eli Schwartz “Capital Budgeting” [on CD]
Road Project Case Study (Petersen) [CD] … added 8/25/03
Loudoun County 2004 Capital Improvement Plan and Fiscal Policies [CD]
Petersen, John *Value Capture Finance*, Unpublished 2001 [on CD]
Petersen, John *An Outline of Capital Budgeting* [on CD]
Peremchand, A *Capital Budgets: Theory and Practice* 2000 [on CD]
Estache and Strong *The Rise and Fall and Emerging Recovery of Project Finance* [CD]
Savvides, S. *Risk Analysis in Investment Appraisal* [CD]
City of Virginia Beach *Series A 2003 Revenue Bonds* [CD]
There may be other selected readings and website references assigned later

Notes: */ available at GMU Book Store or Amazon
**/ available from BMA or Amazon
***/ available at GMU book store, Amazon or World Bank website

Instructor: John E. Petersen (703) 273-2653 (H) (703) 993-2286(W)
eMail jep@gmu.edu Office ARL 265

Method of Instruction: This course will be taught as a survey course, and several perspectives will examined. Many topics will be covered. While this is not a seminar, it is expected that you will participate in class discussion. Questions will be asked in class by me (and others) and your helping with answers is most appreciated. Participation should demonstrate an understanding of the course assignments


Interest Profile: Please write a brief (not more than one page) profile telling about your background, graduate-level course work, your career aspirations, and your expectations from this course. Please submit the interest profile to me no later than the September 16 class session. You can email it to me at “jep@gmu.edu”

Research Project: A research project will be assigned early in the semester. After the second week of classes, class will be divided into 3- and 4-person teams. The task will be to analyze an infrastructure project and its financing or a method of infrastructure financing and projects for which it is to be used. A suggestive list of topics will be circulated, but I encourage each team to tackle a topic that it likes. What I want is a critique of a project: the policy objectives, the basic economics of the activity, the benefits versus costs, risks entailed and how they are shared, and the appropriateness of the method of finance used. The team’s written report is not exceed 20 pages, double-spaced, including a one-page executive summary at the
beginning, charts or graphics, and the footnotes and references. I’d greatly appreciate 12 point type size. A standard guide for how to reference and do manuscripts will be given.

Using the above guidance, the team may select a topic of interest to it in an area of infrastructure finance at the international, federal, state or local level. The report should demonstrate your team’s ability to define the problem area, show its significance, assess the relevant factors including alternatives, and make a reasoned argument as to why the proposed or actual financing method was appropriate and if it was successful or not. Please be careful in your citations and references and make sure that this is your own work. The topic is subject to my approval. The grade will be given in common to all members of the team. It is up to you that the work is equitably shared.

Upon the formation of teams of three or four persons each, please meet among yourselves and select a topic. Please give me your proposed research project on or before September 30th. You may email it to me. A brief written explanation of the research question will be sufficient (a few sentences) and I will get back to you if I have any questions. Note that all research project papers are due on or before November 11. Instructions will be provided concerning delivery. Starting on November 18, there will be brief (15-minute) presentations by each of the teams. It is up to your team as to how you wish to make the presentation and you will be graded separately on it, again as a group. These presentations will make up about ½ of the class time for the last three sections of the class.

Quiz:
There will be an hour “quiz” due at the beginning of the October 7 class session. This is intended to give both you and me an early indicator of your understanding of the material covered to that date. The quiz will be emailed to you the weekend of Monday October 4-5, and should be emailed (or handed to me) before the start of class on October 7. It will consist of short essay answers. It is to be independently by each individual alone (Honor System) and should not require more than an hour or so of your time.

Grading:
Weights for the course grade will be as follows:¹

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Mid-term Quiz</td>
<td>15%</td>
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<tr>
<td>Research Project</td>
<td>30%</td>
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<tr>
<td>Project Presentation</td>
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<tr>
<td>Class Participation</td>
<td>10%</td>
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<td>Final Examination</td>
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Office Hours: I will be available before class at the hours given below or in my office by appointment. My normal office hours for meeting will be 2:00 to 4:00 PM on most Mondays and 2:00 to 4:00 PM on most Tuesday. Other times are possible, if you let me know. If you wish an appointment, please call (703) 993-2886 (Office) or (703) 273-2653 (Home) ahead. My e-mail address is jep@gmu.edu.

¹ Where letter or numeric grades are used, the following is the sequence:
A+: 98-100, A: 92-97.9 A-: 90-91.9   B+: 88-89.9, B: 82-87.9, B-: 80-81.9   C+: 78- 79.9. C: 72-77.9, C-: 70-71.9
Course Schedule: (Subject to Change)

August 26:  Introductions, scope and objectives of course, discussion of presentations and research project.

Readings:  Petersen “An Outline of Capital Budgeting”
Aronson & Schwatz “Capital Budgeting”

September 2:  Basics of Capital Project Financial Planning and Analysis
Concepts of economic and financial returns, cost of capital, discounting, risk and reward. Capital Budgeting in Government and the Firm
Decision-making over time, choices among alternatives, differences and similarities in public and private sectors

Readings:  Petersen “An Outline …”
Loudoun County Capital Improvement Plan

September 9:  Understanding Various Operating and Financing Structures
Government – owned, Privately – owned, and mixed.

Readings:  Mody Overview and Chapter 1
Petersen, Road Project Case Study (CD)
Savvides Risk Analysis in Investment Appraisal
Prechmand Capital Budgets in Theory and Practice

September 16:  PERSONAL PROFILE DUE
Sources of capital, concepts of security and creditworthiness
The financial markets and banks, intergovernmental grants
The roles of equity and debt, public and private sectors

Readings:  Mody Chapters 4, 5 and 7
BMA Fundamentals Chapter 1

September 23:  The U.S. Municipal Bond Market
The structure and operation of the tax-exempt market, the issuers
How deals and developed and structured, Primary Market

Readings:  BMA Fundamentals Chapters 2 to 4

September 30  RESEARCH PAPER TOPIC DUE
The U.S. Municipal Bond Market
Secondary Markets, Credit Analysis, Credit ratings and Enhancements.

Readings:  BMA Fundamentals Chapters 5 to 8

Guest Lecture:  John Krause, Government Finance Group

October 7:  QUIZ FIRST HOUR
General Government (tax-supported) and facilities. Politics and economics of infrastructure projects.

Readings:  Altshuler and Luberoff Chapter 1 to 3
Standard and Poors (S&P) pp. 56-72

October 14  No Class
Readings:  Altshuler and Luberoff Chapter 1 to 3 (con’t)
October 21: Environmental and Energy-related Finance
Water supply and sewer, Electric Power and Gas
Readings: S&P pp. 148-173
Handout: “Water and sewer grants and consequences for future replacement and rates”
October 28  
Transportation Finance:
Guest Lecture: Ray Peletier  
Highways and Toll Facilities  
Readings: Altshuler and Luberoff  
Chapter 4  
S&P  
pp. 73-74, 195-213, 221-223  
Handout: Virginia Highway 81 and PPTR

November 4:  
(No class will be held unless make-up is needed)

November 11:  
RESEARCH PROJECT REPORTS DUE  
Transportation Finance:  
Airports, Ports and Terminals … Transit  
Readings: Altshuler and Luboff  
Chapters 5 and 6  
S&P  
pp. 179-194, 218-220  
Class Project Reports

November 18  
Winding-up the Mega-Projects and some International Perspectives on Project Finance  
Readings: Altshuler and Luboff Chapters 7 to 9 (con’t.)  
Estache and Strong “Rise and Fall of Tollroads….”  
Mody Chapter 8  
Class Project Reports

November 25:  
Economic and Community Development Projects  
Value-capture and other various subsidized mechanisms  
Real estate markets and project finance issues  
Readings: Petersen “Value Capture Finance”  
Handout: Feasibility Report of DC TIF project  
Class Project Reports

December 2  
Doing a Deal: How information is presented and used.  
Readings: Review Virginia Beach Revenue Bond (2003A)  
Class Project Reports

December 9:  
FINAL EXAM (Regular class time)  
Nature of the Exam will be given